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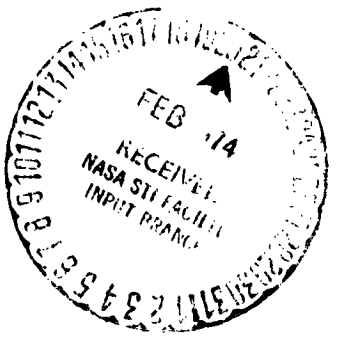

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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MISALIGNMENT STUDIES ON

SPACE SHUTTLE INTEGRATED VEHICLE

(IA31FC)

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for

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Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: MSFC TWT 573
NASA Series No.: IA31FC
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MISALIGNMENT STUDIES ON THE SPACE SHUTTLE INTEGRATED VEHICLE

By

P. Ramsey*, T. Mc Means**, and T. Davis**

ABSTRACT

Recent test series at Marshall Space Flight Center's 14" x 14" Transonic Wind Tunnel have raised questions concerning the effects of test model element misalignments on test results. TWT-573 was designed to study these misalignment effects in detail by purposely misaligning model elements a known amount. Misalignments in TWT-573 were achieved by use of special offset spacers and mounting hardware to change yaw, pitch and roll on various elements of a 0.004-Scale PRR Baseline Space Shuttle Configuration model. By comparing the misalignment runs to the nominal configuration with no misalignment, relative effects of the misalignment could be seen. This data was obtained over a Mach range of .9 to 1.46 using a angle of attack sweep of -10° to +10° in 2° increments. The Test Program consisted of 40 runs, which required approximately 4 days tunnel occupancy to complete.

* NASA/MSFC
** Northrop Services, Inc.

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TABLE OF CONTENTS

INDEX OF MODEL FIGURES

INDEX OF DATA FIGURES

SCHEDULE OF PLOTTED COEFFICIENTS:

A) CN, CLM, CA, CAF, CABE, CABO, CABS Vs. ALPHA

B) CN, CLM, CA, CAF, CABE, CABO, CABS, CY, CYN, CBL Vs. ALPHA

NOMENCLATURE
General

SYMBOL	SADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, $slugs/ft^3$

Reference & C.G. Definitions

Ab		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
ℓ_{REF} $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE (Continued)

Body-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
		Stability-Axis System
C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

ADDITIONS TO NOMENCLATURE

β	BETA	angle of sideslip of reference body; degrees
ψ	PSI	angle of yaw of reference body; degrees
ψ_{SB}	SRBYAW	angle of yaw of SRB relative to reference body; degrees
ψ_o	ORBYAW	angle of yaw of orbiter relative to reference body; degrees
ϕ	PHI	angle of roll of reference body; degrees
ϕ_o	ORBROL	angle of roll of orbiter relative to reference body; degrees
γ		angle of pitch of reference body; degrees
γ_{SB}	SRBPIT	angle of pitch of SRB relative to reference body; degrees
i_o	ORBINC	incidence angle between orbiter and external tank centerlines; degrees
x		horizontal separation distance between orbiter and tank aft attach points; inches
z	DELTAZ	vertical separation distance between orbiter and tank aft attach points; inches
G		denotes the application of grit to model components
δ_r	RUDDER	rudder deflection
δ_e	ELEVON	elevon deflection
$C_{N_{bo}}$	CNBO	normal force coefficient component of orbiter base drag
$C_{A_{bo}}$	CABO	orbiter base axial force coefficient
$C_{A_{be}}$	CABE	external tank base axial force coefficient
$C_{A_{bs}}$	CABS	solid rocket booster base axial force coefficient

TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Trisonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to eigher vacuum or atmospheric conditions. A Mach number range from .2 to 5.85 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50, and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately -40°F dew point and 500 psi. The compressor is a three-stage reciprocating unit driven by a 1500 hp motor.

The tunnel flow is established and controlled with a servo actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 180°F. The air then passes through the test section which contains the nozzle blocks and test region.

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° ($\pm$10°). Sting offsets are available for obtaining various maximum angles of attack up to 90°.

MODEL DESCRIPTION AND TEST HARDWARE

The model used in TWT 573 was a 0.004 scale model of the PRR Baseline Launch Configuration Space Shuttle. Except for the orbiter wings, the model was constructed from stainless steel with the wings made from aluminum. All model elements were built according to MCR 0074 Baseline Drawings by Rockwell, dated 15 January 1973.

For arrangement of model elements in test configuration see Figure 2. Dimensions of each model element are presented in the Component Description Sheets and on the figure.

Since a means for misalignment was needed, offset spacers were used. By attaching the Orbiter and SRB's directly to the External tank via these spacers and normal mounting hardware, a means for misalignments was readily available. Pitch, yaw and roll changes were then made by removing one set of spacers and mounting hardware and installing a different set.

As mentioned above, all model elements were mounted on the external tank element. This arrangement was used to obtain total vehicle data needed to check effects of misalignments. This data was gathered by a single six-component strain-gage balance (MSFC 232) mounted in the external tank using Balance to Adapter 80M32593. Supporting the model in the Test Section was sting 98 and straight extension S-3.

All model control surfaces were in the streamline position for this test series.

The total vehicle model had an approximate cross-section area of 4.0 square inches. This gave a tunnel blockage of 2.0% at $\alpha = 0°$. With each

increase in α the blockage percentage also increased.

Some test runs were conducted using grit. See Figure 8 for sketch of grit application.

CONFIGURATIONS INVESTIGATED

Using the offset spacers various misalignments were tested to determine effect on total vehicle aerodynamic data. The various configurations investigated were:

1. Basic configuration using no misalignment

   O_3 PRR Baseline orbiter less abort solid rocket motors

   T_9 324 inch Diameter External Tank with ogive nose

   S_3 142 inch Diameter Solid Rocket motor with 18° nose cone

2. Orbiter yawed 1° relative to external tank centerline.

   $O_3(\psi_o = +1°)$ Orbiter at +1° yaw

   T_9 See baseline configuration

   S_3 See baseline configuration

3. Orbiter rolled +1° relative to external tank centerline.

   $O_3(\phi_o = +1°)$ Orbiter at +1° of roll

   T_9 See baseline configuration

   S_3 See baseline configuration

4. SRB pitched +1° relative to external tank centerline.

   O_3 See baseline configuration

   T_9 See baseline configuration

   $S_3(\gamma_{SB} = +1°)$ SRB pitched +1°

5. SRB pitch -1° relative to external tank centerline.

   O_3 See baseline configuration

   T_9 See baseline configuration

   $S_3(\gamma_{SB} = -1°)$ SRB pitched -1°

6. SRB yawed +1° relative to external tank centerline.

O_3	See baseline configuration
T_9	See baseline configuration
$S_3(\psi_{SB}=+1°)$	SRB yaw +1°

7. SRB yawed -1° relative to external tank centerline.

O_3	See baseline configuration
T_9	See baseline configuration
$S_3(\psi_{SB}=-1°)$	SRB yaw -1°

8. Grit study of baseline configuration

O_3 G	
T_9 G	same as baseline with Grit added.
S_3 G	

9. Data repeatability study using Grit configuration model.

O_3 G	
T_9 G	same as baseline with Grit added.
S_3 G	

The O_3 Orbiter model consists of several parts and may be represented as $B_{10}C_5D_7F_4M_3W_{87}E_{18}V_5R_5$. These parts are defined as follows:

B_{10}	Double delta wing fuselage with 57.0 in. radius nose
C_5	Canopy
D_7	Manipulator housing for lightweight orbiter

F_4	Body flap
M_3	OMS pods for lightweight orbiter
W_{87}	Double delta wing for lightweight orbiter
E_{18}	Elevon
V_5	Vertical tail for lightweight orbiter
R_5	Rudder

The ET(T9) and SRB(S3) were not broken into sub assemblies for this test.

DATA REDUCTION

The body axis system was used in TWT 573, with all coefficients being presented in non-dimensional form. See the axis system used in Figure 1.

A list of reference dimensions and areas are:

	Symbol	Full Scale	0.004-Scale
Reference area	S_{ref}	2690 ft^2	6.198 $in.^2$
Reference length	ℓ_{ref}	1328 in.	5.313 in.
Reference span	b_{ref}	1328 in.	5.313 in.
Orbiter base area	A_{b_O}	427.8 ft^2	0.9857 $in.^2$
External Tank base area	A_{b_E}	572.55 ft^2	1.319 $in.^2$
SRB base area (1 SRB)	A_{b_S}	365.87 ft^2	0.843 $in.^2$
BMC location (from base of ET)			3.200 in.
MRP location (forward of the BMC)			1.564 in.

The Moment Reference Point (MRP) was located on the external tank centerline at the orbiter nose as shown in Figure 2. The Balance Moment Center (BMC) is also on the external tank centerline, 3.200 inches from the base of the tank. Therefore, the MRP is 1.564 inches forward of the BMC.

In addition to the standard force and moment data coefficients another set of coefficients were required. These were obtained by subtracting out the forces and moments due to base pressures from the standard data set.

The equations used in the calculations are:

$$CAF = CA - CAB_O - (2)\, CAB_S - CAB_E$$

$$CAB_O = CPB_O \frac{A_{b_O}}{S_{ref}} \quad \text{(orbiter base axial force coefficient)}$$

$$CAB_S = CPB_S \frac{A_{b_S}}{S_{ref}} \quad \text{(SRB base axial force coefficient)}$$

$$CAB_E = CPB_E \frac{A_{b_E}}{S_{ref}} \quad \text{(external tank base axial force coefficient)}$$

Where:

$$CPB_O = \frac{P_{b_O} - P_\infty}{q}$$

$$CPB_S = \frac{P_{b_S} - P_\infty}{q}$$

$$CPB_E = \frac{P_{b_E} - P_\infty}{q}$$

All data presented was corrected for sting deflections and weight tares.

Table 1

MODEL COMPONENT DIMENSIONAL DATA

MODEL COMPONENT: Body B10

GENERAL DESCRIPTION: Double Delta Wing Fuselage Per Lines VL70-000093, with 57.0 in Radius Nose.

2A Configuration Lt. Wt. Orbiter

Scale Model = .004

DRAWING NUMBER: V172-000061
VL70-000093

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length, in.	1328.3	5.313
Max. Width X_o560 to X_o1307	216.0	0.864
Max. Depth	239.0	0.956
Fineness Ratio	5.495	5.495
Area, FT^2		
Max. Cross-Sectional	319.556	0.005
Planform		
Wetted		
Base		

Table 1. (Cont.)

MODEL COMPONENT: Canopy - C5

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL70-000092.

Scale Model = .004

DRAWING NUMBER: VL70-000092

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Sta. Fwd Bulkhead	391.00	1.564
Sta. T.E.	560.0	2.240
Canopy Intersects Body ML	391.00	1.564
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

Table 1. (Cont.)

MODEL COMPONENT: Manipulator Housing D-7

GENERAL DESCRIPTION: 2A Configuration, Light WT. Orbiter Per Lines VL70-000093

Scale Model = .004

DRAWING NUMBER: VL70-000093

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length, in.	881.00	3.524
Max. Width, in.	51.00	0.204
Max. Depth, in.	20.00	0.080
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

℄ Fuselage, BP = 0.0
WP = 500.0 INFS
X_o 426.0 to 1307.0

Table 1. (Cont.)

MODEL COMPONENT: F4 Body Flap

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL70-000094 "A"

Scale Model = .004

DRAWING NUMBER: VL70-000094A

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length, in.	84.70	0.3388
Max. Width, in.	265.00	1.060
Max. Depth		
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform, ft^2	142.63715	0.002282
Wetted		
Base		

Table 1. (Cont.)

MODEL COMPONENT: OMS PODS-M3

GENERAL DESCRIPTION: 2A Light WT Configuration; per MC120074, Per NR Lines VL70-000094.

Scale Model = .004

DRAWING NUMBER: VL70-000094

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length, in.	346.0	1.440
Max. Width, in.	108.0	0.432
Max. Depth, in.	72.8	0.291
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

℄ of OMS POD

WP = 463.9 inches FS; WP 400.0 + 63.9 = 463.90 INFS
1.600 + .2556 = 1.8556 INMS

BP = 80.0 in. FS; 0.320 INMS

From Fuselage Station 1214.0 to 1560 INFS = 346.0 INFS
4.856 to 6.240 = 1.384 INMS

Table 1. (Cont.)

MODEL COMPONENT: Wing W-87 New Light Weight

GENERAL DESCRIPTION: Orbiter Configuration per lines VL70-000093

Scale Model = .004

DRAWING NUMBER: VL70-000093

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area, FT^2 (W.R.P.)		
Planform	2689.38	0.043
Wetted	--	--
Span (equivalent), FT	77.12	0.308
Aspect Ratio	2.214	2.214
Rate of Taper	1.176	1.176
Taper Ratio	0.209	0.209
Diehedral Angle, degrees @ 75.33% element line	3.860	3.860
Incidence Angle, degrees @ .425% col. 00%	3.000	3.000
Aerodynamic Twist, degrees	--	--
Toe-In Angle	--	--
Cant Angle	--	--
Sweep Back Angles, degrees		
Leading Edge	44.873	44.873
Trailing Edge	-10.242	-10.242
0.25 Element Line	35.050	35.050
Chords:		
Root (Wing Sta. 0.0)	690.19	2.761
Tip, (equivalent)	144.30	0.577
MAC	476.76	1.907
Fus. Sta. of .25 MAC	1136.12	4.544
W.P. of .25 MAC	289.44	1.158
B.L. of .25 MAC	181.03	0.724
Airfoil Section		
Root		
Tip		
EXPOSED DATA		
Area, FT^2	1746.87	6.987
Span, (equivalent), FT	59.16	0.237
Aspect Ratio	2.004	2.004
Taper Ratio	0.256	0.256
Chords		
Root	562.77	2.251
Tip	144.30	0.577
MAC	394.81	1.579
Fus. Sta. of .25 MAC	1185.17	4.741
W.P. of .25 MAC	291.56	1.166
B.L. of .25 MAC	250.54	1.002
LEADING EDGE CUFF (data for (1) side)		
Plan form area, FT^2 (BP 108.0)	120.333	0.0019
L.E. Intersect Fus ML @ STA	560.0	2.240
L.E. Intersects Wing @ STA	1035.0	4.140

Table 1. (Cont.)

MODEL COMPONENT: Elevon E-18

GENERAL DESCRIPTION: 2A Configuration Per W-87, NR Lines VL70-000093

Data for (1) of (2) Sides

Model Scale = .004

DRAWING NUMBER: VL70-000093

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area, FT^2	205.517	0.0033
Span (equivalent), in.	353.34	1.413
Inb'd equivalent chord	114.78	0.459
Outb'd equivalent chord	55.00	0.220
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	.208	.208
At Outb'd equiv. chord	.400	.400
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.02	-10.02
Hingeline	0.00	0.00
Area Moment (Normal to hinge line), FT^3	1548.07	0.00010
Product of area moment		

Table 1. (Cont.)

MODEL COMPONENT: Vertical Tail V5 (Light Wt. Orbiter Config)

GENERAL DESCRIPTION: Center Line Vertical Tail on the Double Delta Configuration with Double Wedge Airfoil and Rounded Leading Edge, Tot. Data Includes Void Area Listed Below Scale Model = .004

DRAWING NUMBER: VL70-000095

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area, FT^2	386.05	0.006
* Void (included above), FT^2	13.17	0.0002
Blanketed included above, FT^2	12.67	0.0002
Span (equivalent), FT	24.37	0.097
Aspect Ratio	1.590	1.590
Rate of Taper	0.507	0.507
Taper Ratio	0.426	0.426
Diehedral Angle, degrees	--	--
Incidence Angle, degrees	--	--
Aerodynamic Twist, degrees	--	--
Toe-In Angle	0.0	0.0
Cant Angle	0.0	0.0
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	26.249	26.249
0.25 Element Line	41.130	41.130
Chords:		
Root (Wing Sta. 0.0)	257.99	1.032
Tip, (equivalent)	109.78	0.439
MAC	193.84	0.775
Fus. Sta. of .25 MAC	1473.64	5.895
W.P. of .25 MAC	647.31	2.589
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Root		
Tip		
EXPOSED DATA		
Area		
Span, (equivalent)		
Aspect Ratio		
Taper Ratio		
Chords		
Root		
Tip		
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		

*Void area noted is the area located at lower aft portion of tail surface.

Table 1. (Cont.)

MODEL COMPONENT: Rudder R5

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL70-000095.

Scale Model - .004

DRAWING NUMBER: VL70-000095

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area, FT^2	98.67	0.0116
Span (equivalent), in.	201.0	0.804
Inb'd equivalent chord	91.585	0.366
Outb'd equivalent chord	50.833	0.203
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83314	34.83314
Tailing Edge	26.24915	26.24915
Hingeline	34.83314	34.83314
Area Moment (Normal to hinge line), FT^3 Product of area and mean chord	526.125	0.00003

TABLE 1. (Continued)

MODEL COMPONENT: BODY - External Tank T_9

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL72-000061B
VL70-000018 ;Body of Revolution

Scale = .004

DRAWING NUMBER: VL78-000018

DIMENSIONS:	THEORETICAL FULL-SCALE	THEORETICAL MODEL SCALE	ACTUAL MEASURED MODEL SCALE
Length	1989.0	7.956	
Max. Width	324.0	1.296	
Max. Depth			
Fineness Ratio	6.13889	6.13889	
Area			
Max. Cross-Sectional	572.555	0.00916	
Planform			
Wetted			
Base	572.555	0.00916	

REF.

FS (Orbiter) 0.00 = Tank Station 751.0 INFS
WP (ET) = 400 - 344.413 = 55.587 INFS
BP (Orbiter) 0.00 = 0.00 ET

Table 1. (Cont.)

MODEL COMPONENT: S3 Booster Solid Rocket Motor

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL77-000012 and VL72-000061B

Body of Revolution, Data for (1) of (2) Sides

Scale Model = .004

DRAWING NUMBER: VL77-000012

Data for (1) of (2) Sides

DIMENSIONS:	THEORETICAL FULL-SCALE	THEORETICAL MODEL SCALE	ACTUAL MEASURED MODEL SCALE
Length	1758.00	7.032	
Max. Width	142.00	0.568	
Max. Depth	259.00	1.036	
Fineness Ratio	6.788	6.788	
Area			
Max. Cross-Sectional	109.978	0.00176	
Planform			
Wetted			
Base	365.870	0.00585	

REF

FS (Orbiter) 0.00 = 751.0 in. ET = 202.0 BSRM

WP (BSRM) = 400 - 344.413 = 55.587 INF

BP (Orbiter) 0.00 = 243.0 BSRM

Table 2.

TEST CONDITIONS
TEST MSFC TWT 573

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
.9	6.3×10^6	7.394	100.9
1.05	6.5	8.439	101.8
1.20	6.7	9.128	101.0
1.25	6.7	9.282	101.5
1.46	6.5	9.473	104.4

BALANCE UTILIZED: MSFC 232

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE: At q = 10 lbs/in.^{2}
NF	300 lbs	±1.50 lbs	±0.024
SF	143 lbs	±0.72 lbs.	±0.012
AF	50 lbs	±0.25 lbs.	±0.004
PM	400 in.-lbs	±2.00 in.-lbs	±0.006
YM	192 in.-lbs	±0.96 in.-lbs	±0.003
RM	100 in.-lbs	±0.50 in.-lbs	±0.002

COMMENTS:

TABLE 3.

TEST: MSFC TWT - 573

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE:

PARAMETER / VALUES

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	i_0	Z	Φ / X	δ_r / δ_e	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .9	1.05	1.20	1.25	1.46	TEST RUN NUMBERS
R90000	O_3 T_9 S_2	A	0	-5	-14	40 / 0	0 / 0	5	1	4	2	3	5	
R90100	O_3 T_9 S_2 G							4	6	7		8	9	
R90200	O_3 T_9 S_3 (Φ_0 = +1°)							4	18	20		19	36	
R90201	O_3 T_9 S_3 (Ψ_0 = +1°)							4	23	21		22	37	
R90300	O_3 T_9 S_3 (Ψ_{SB} = +1°)							4	24	26		25	28	
R903?1	O_3 T_9 S_3 (Ψ_{SB} = -1°)							4	29	27		28	37	
R90401	O_3 T_9 S_3 (γ_{SB} = +1°)							4	30	32		31	40	
R90402	O_3 T_9 S_3 (γ_{SB} = -1°)							4	35	33		34	41	
R90500	O_3 T_9 - S_3 S	0	0					3	13					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN CLM CY CYN CBL CAF CNBØ CAB? CABE CABS 1.0

IDVAR(1) IDVAR 2 NDV

α OR β SCHEDULES

$\alpha = A = -10^\circ$ TO 10° $\Delta\alpha =$? COEFFICENTS

Notes:

1. Positive directions of force cofficients, moment coefficients, and angles are indicated by arrow
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

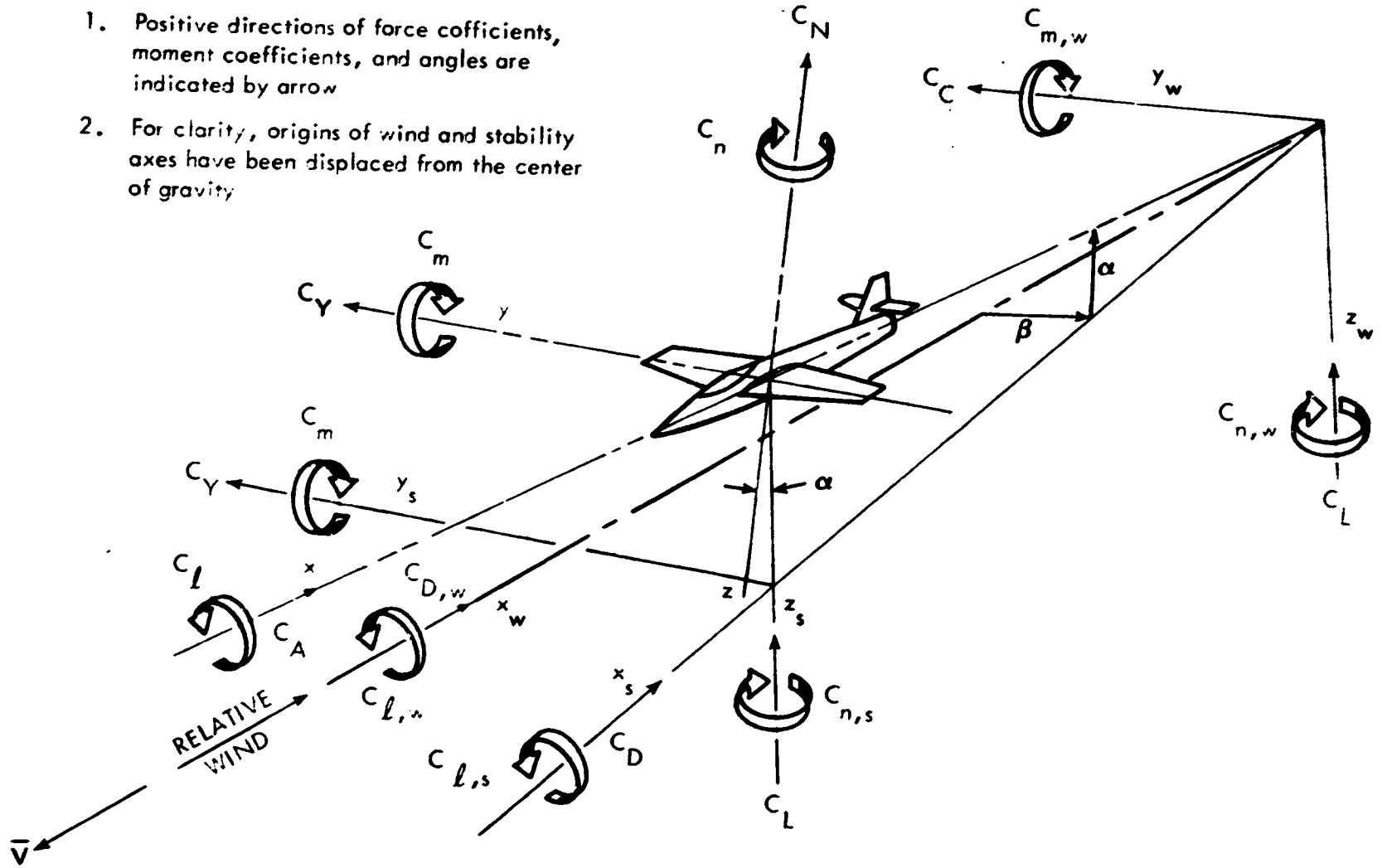


Figure 1. Axis systems.

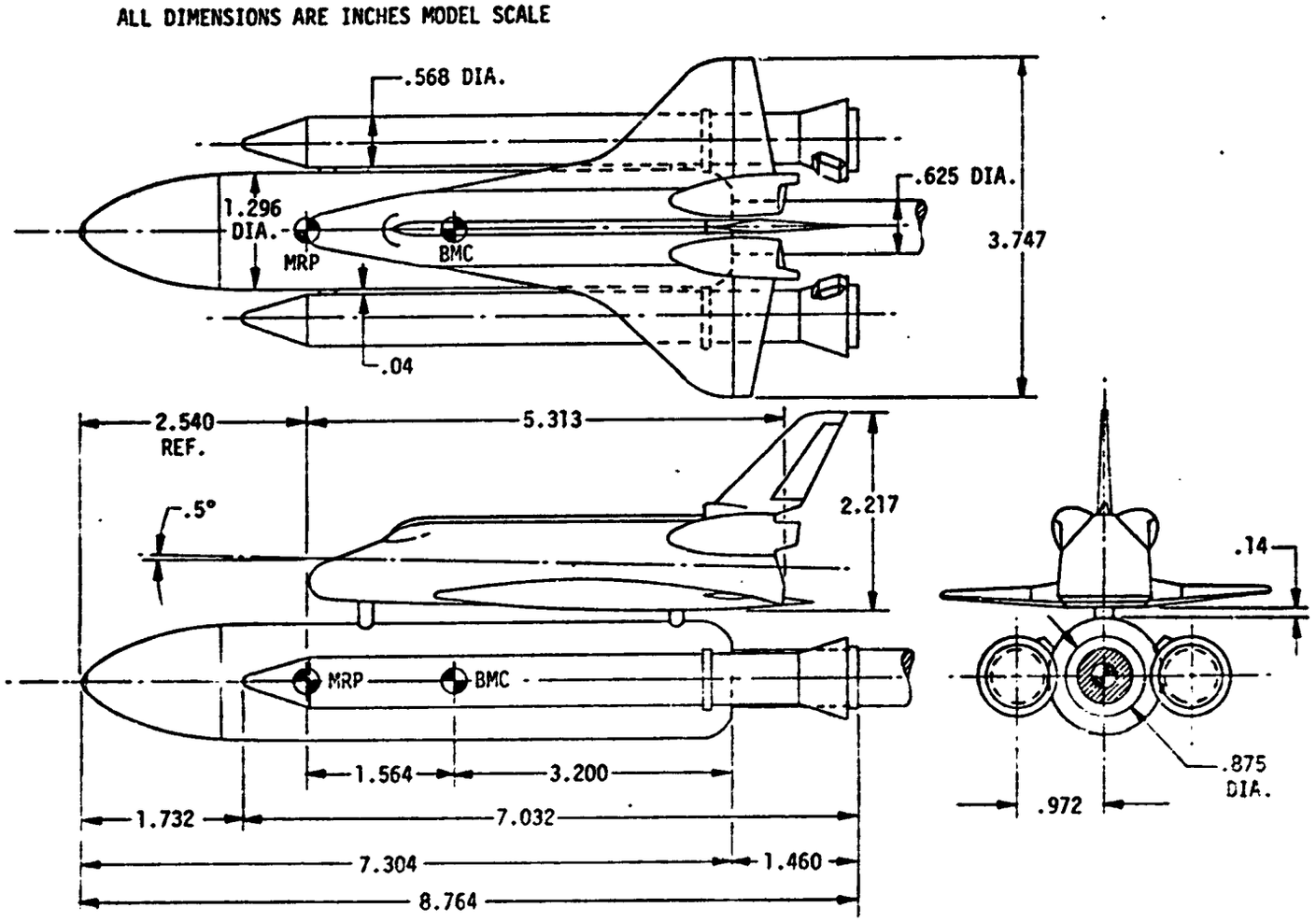


Figure 2. General Arrangement of the Model Configuration $O_3T_9S_3$

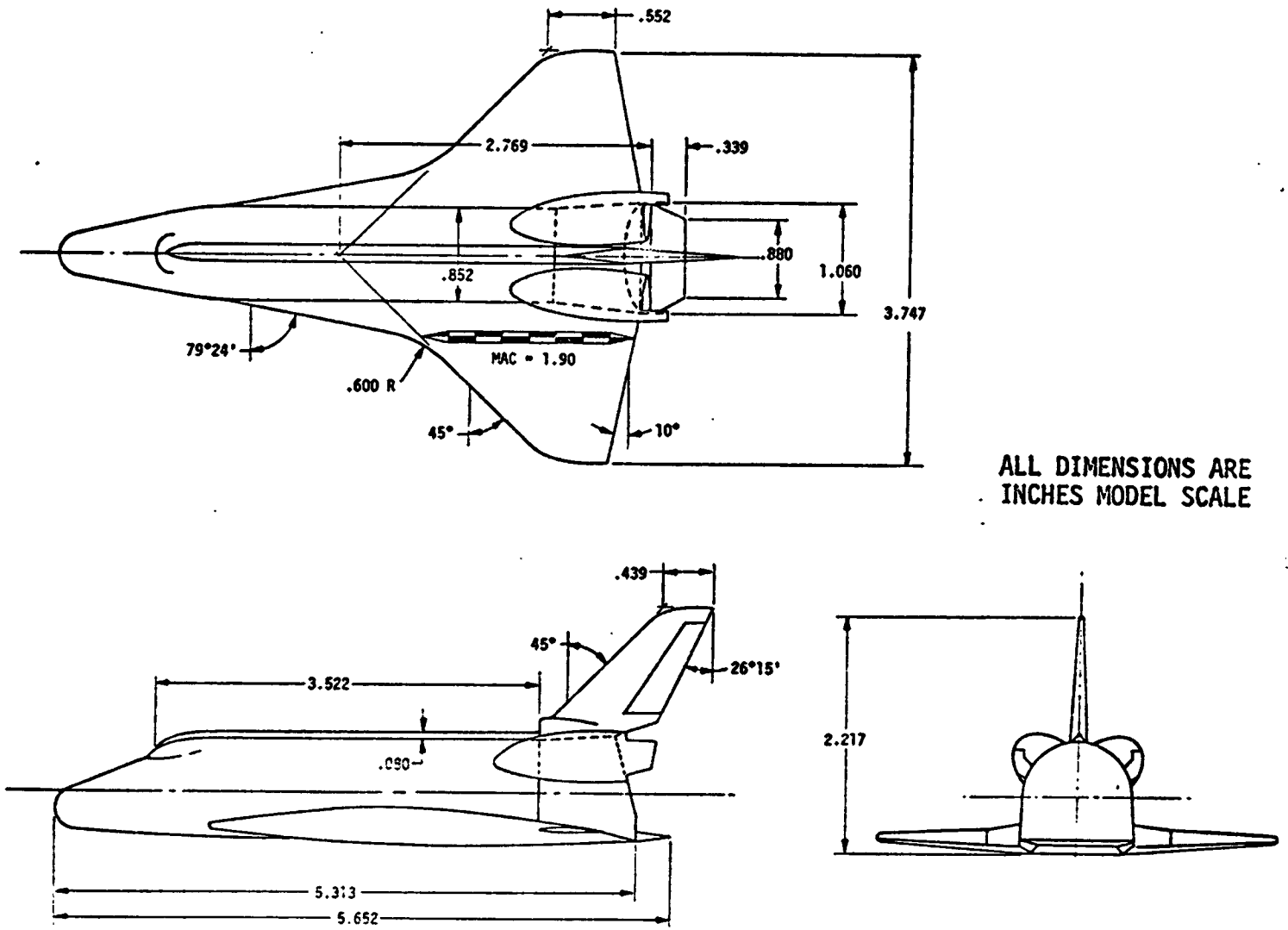


Figure 3. General Arrangement of PRR Orbiter Model O_3

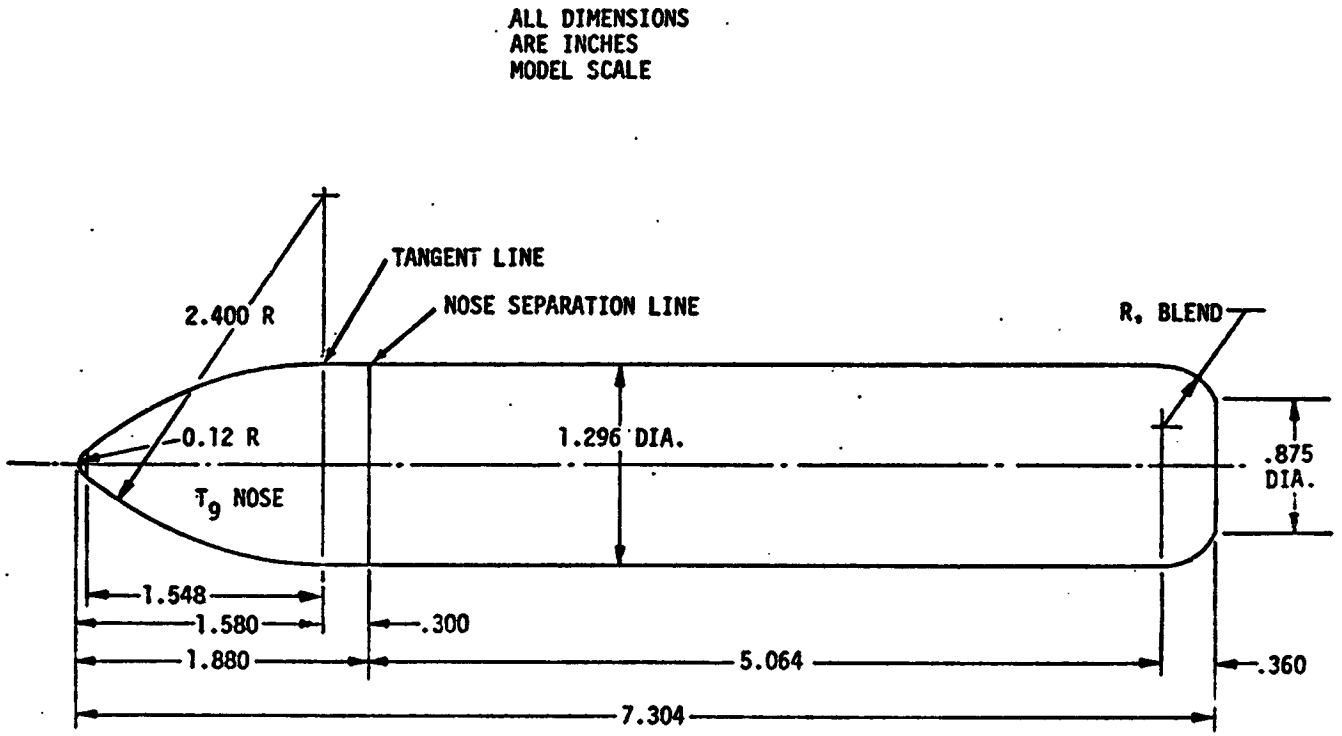


Figure 4. General Arrangement of the External Tank T_8 and T_9

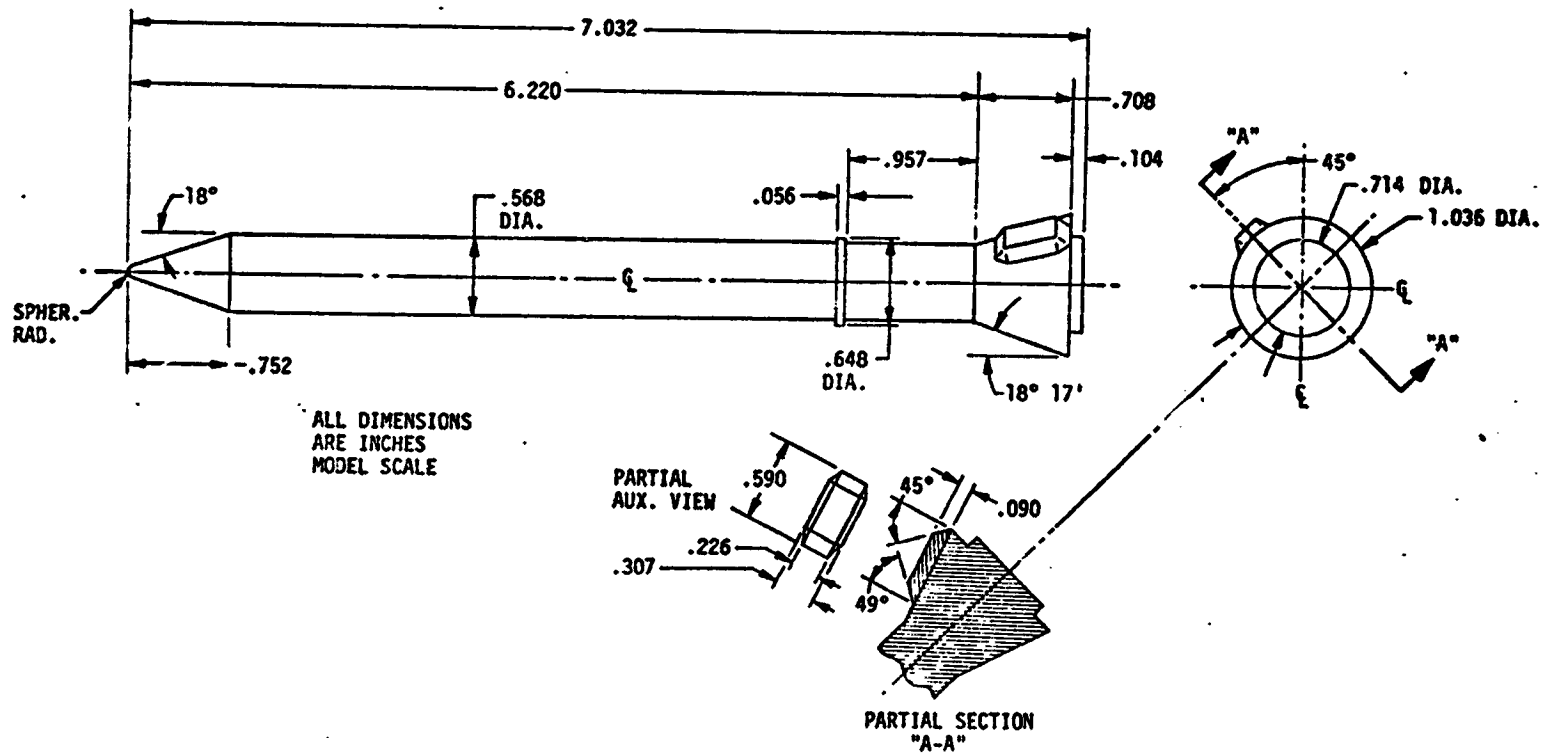
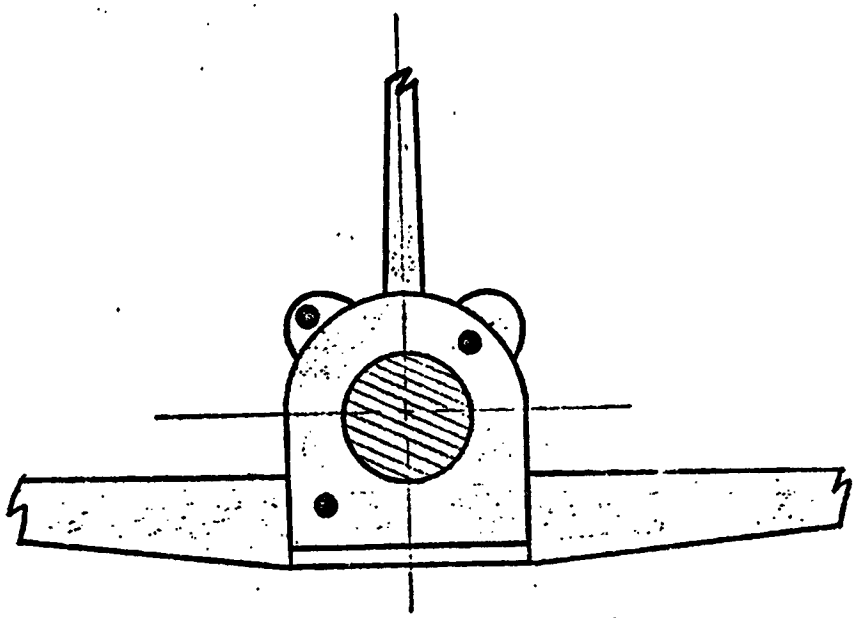


Figure 5. General Arrangement of the SRB S_3



●— BASE PRESSURE MEASUREMENTS

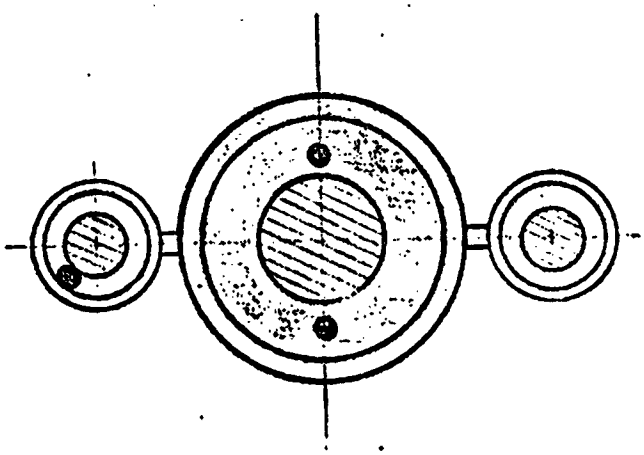
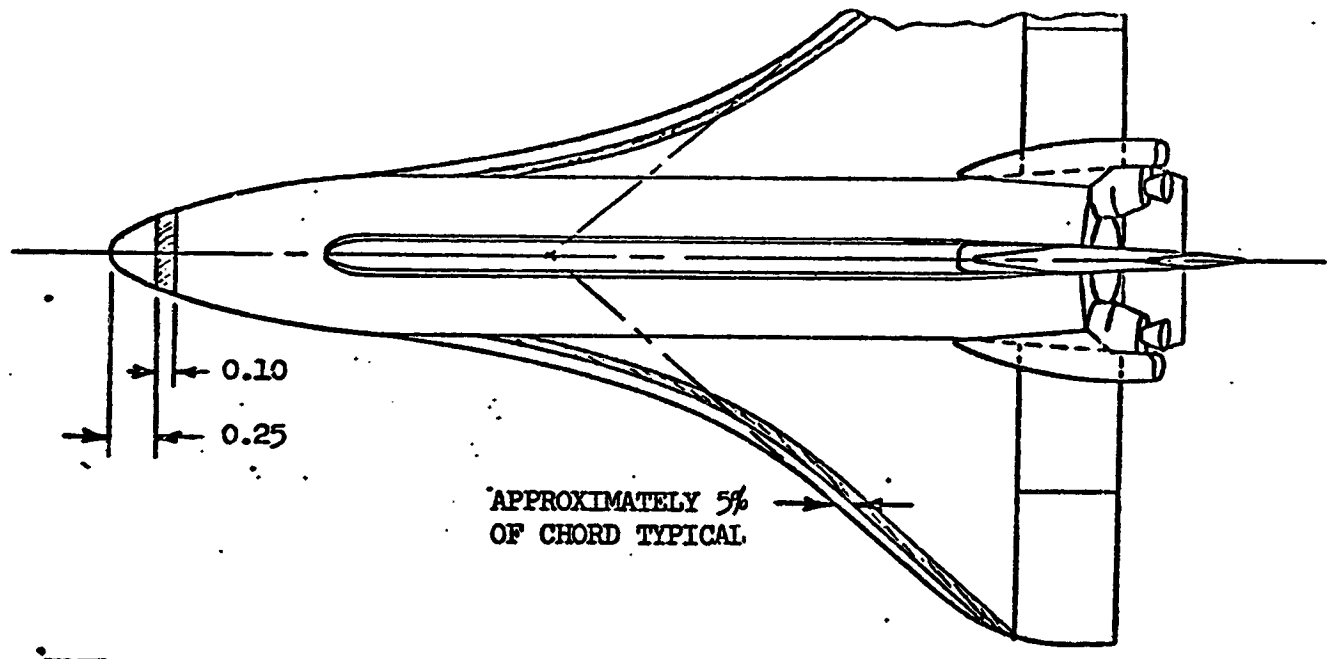


Figure 6. Base Pressure Probe Locations



NOTE: GRIT SIZE NUMBER 180 ON NOSE

80 ON WINGS AND TAIL

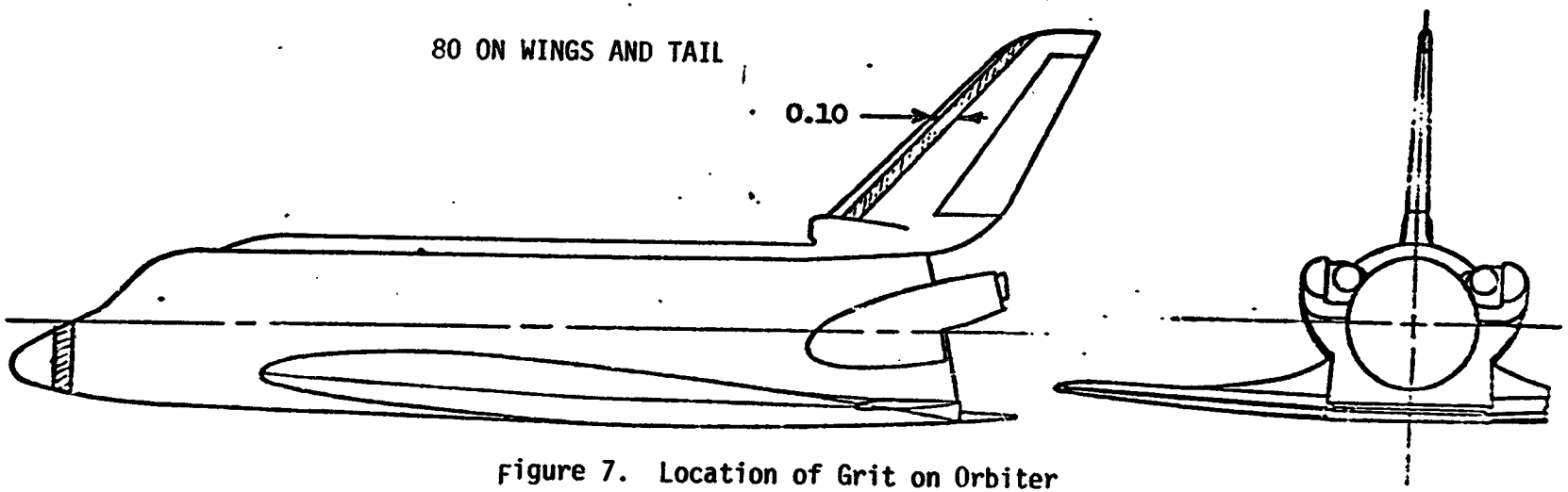


Figure 7. Location of Grit on Orbiter

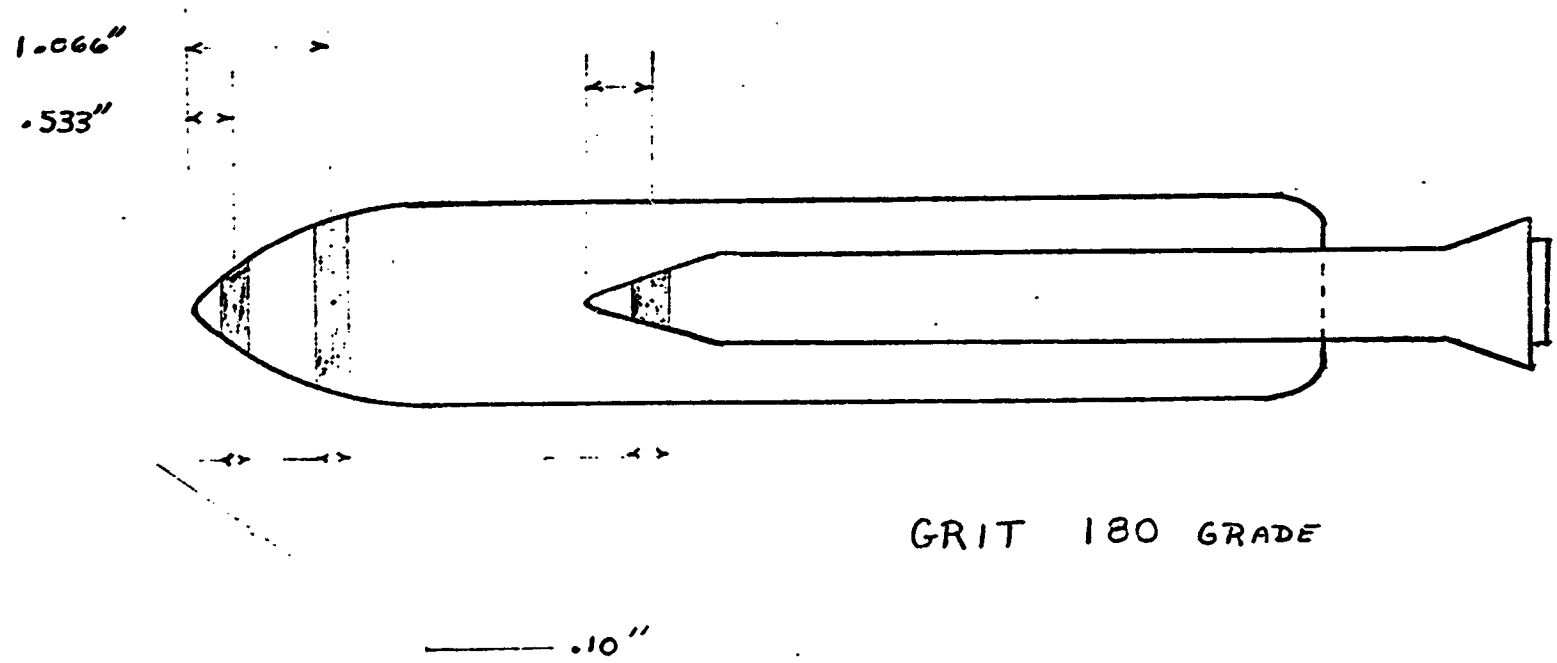


Figure 8. Location of Grit on ET and SRB

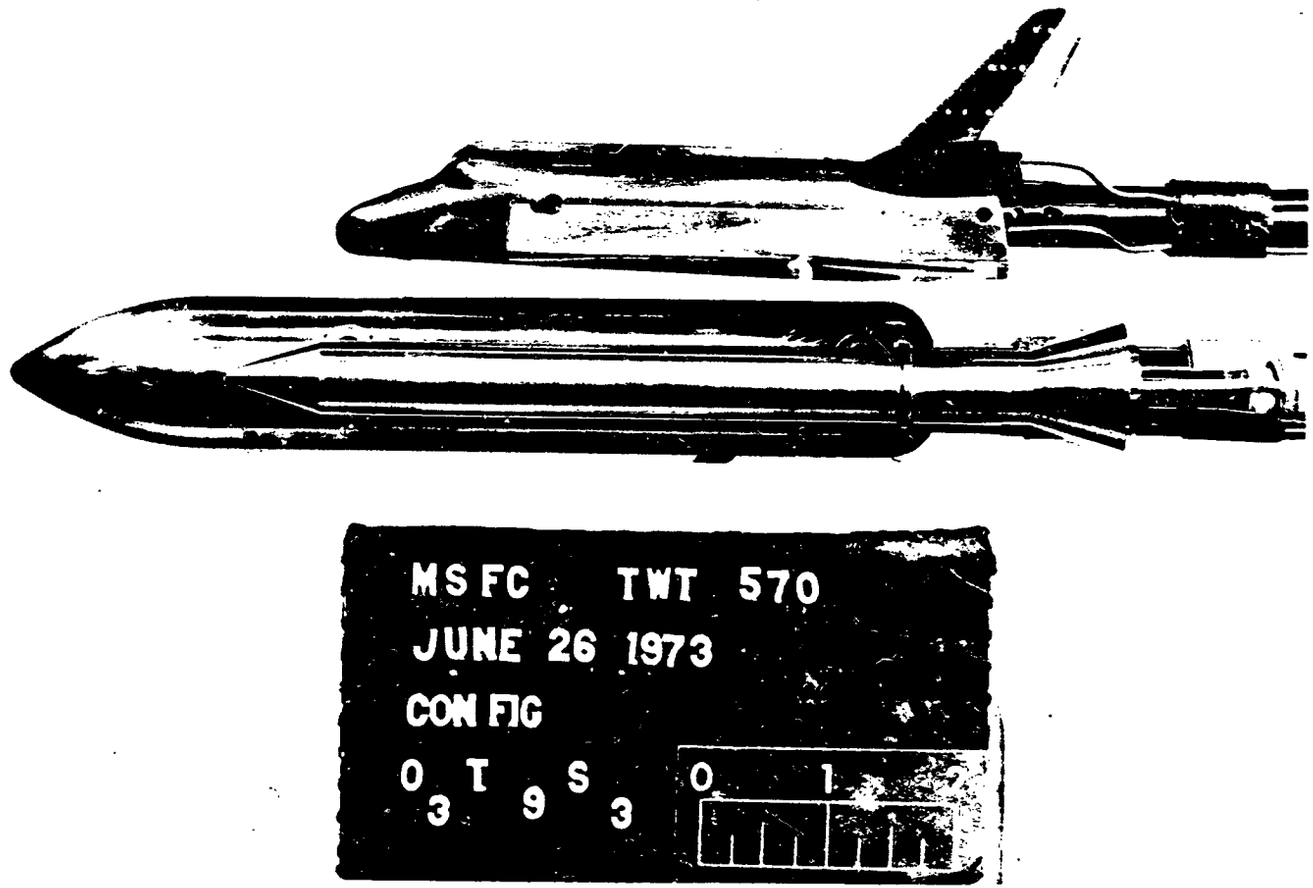


Figure 9. - Photograph of Tunnel Installation of Basic Configuration.

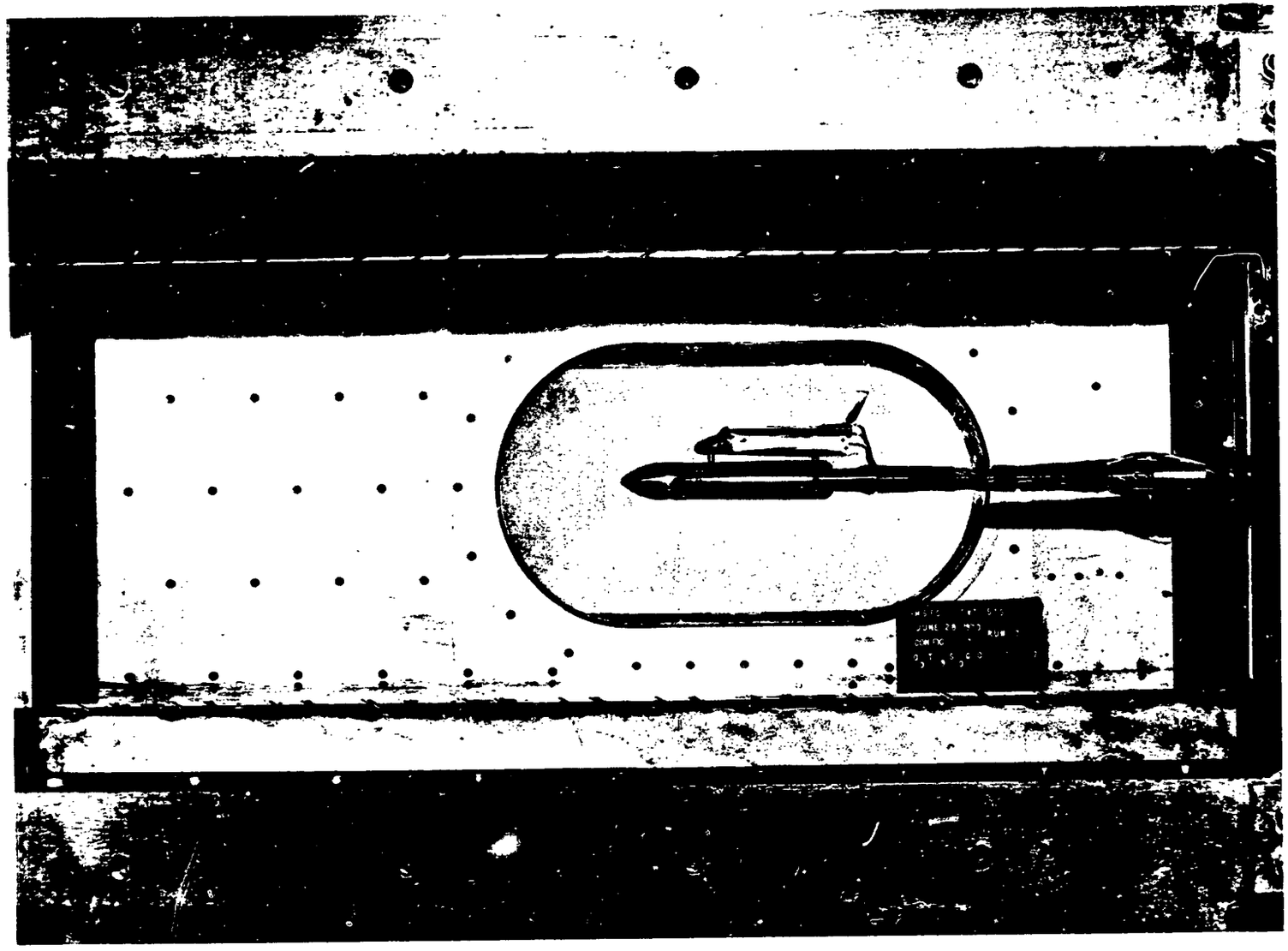


Figure 10. - Photograph of Tunnel Installation of Basic Configuration With Attach Hardware.

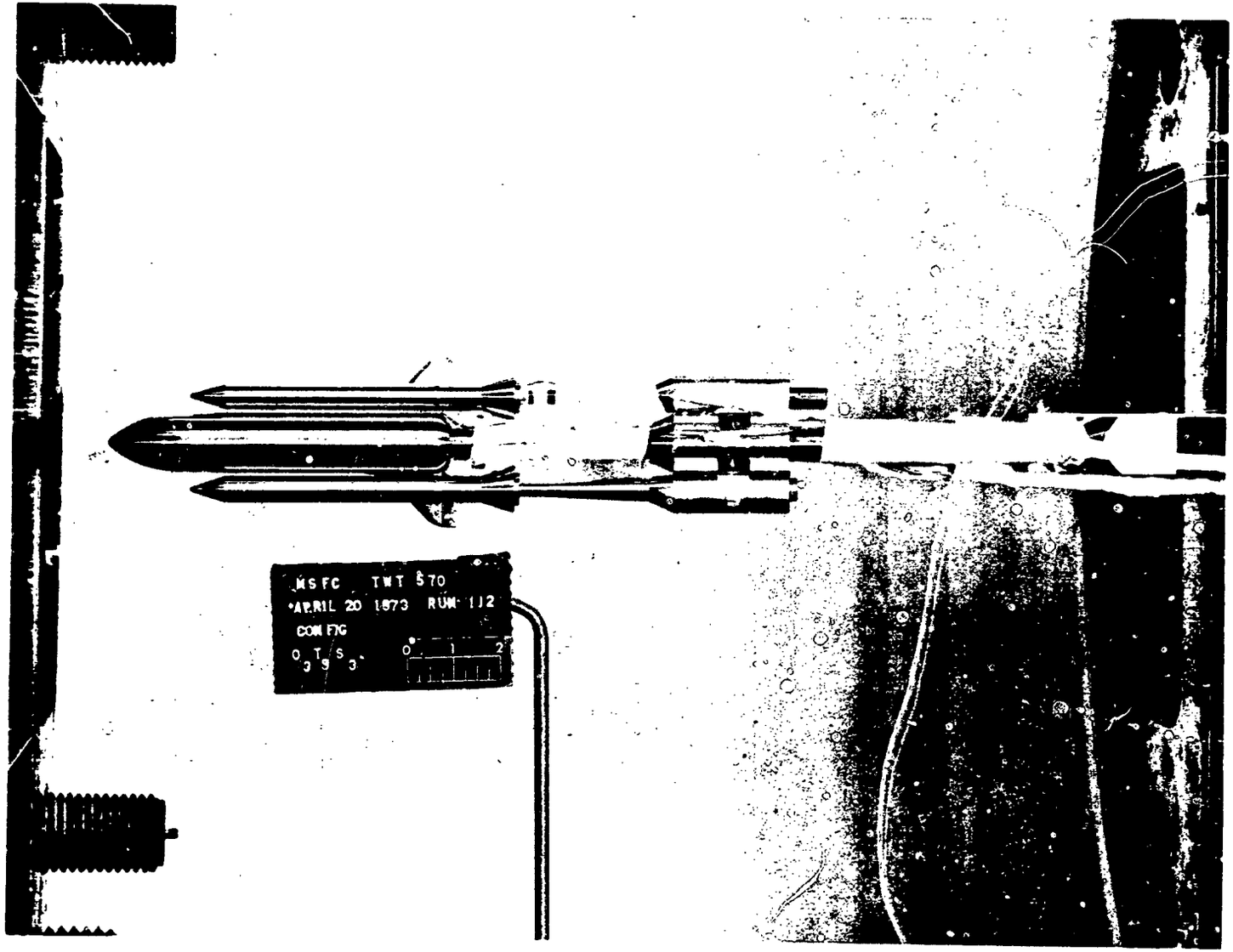


Figure 11. - Photograph of Tunnel Installation of Basic Configuration (ϕ = 90°)

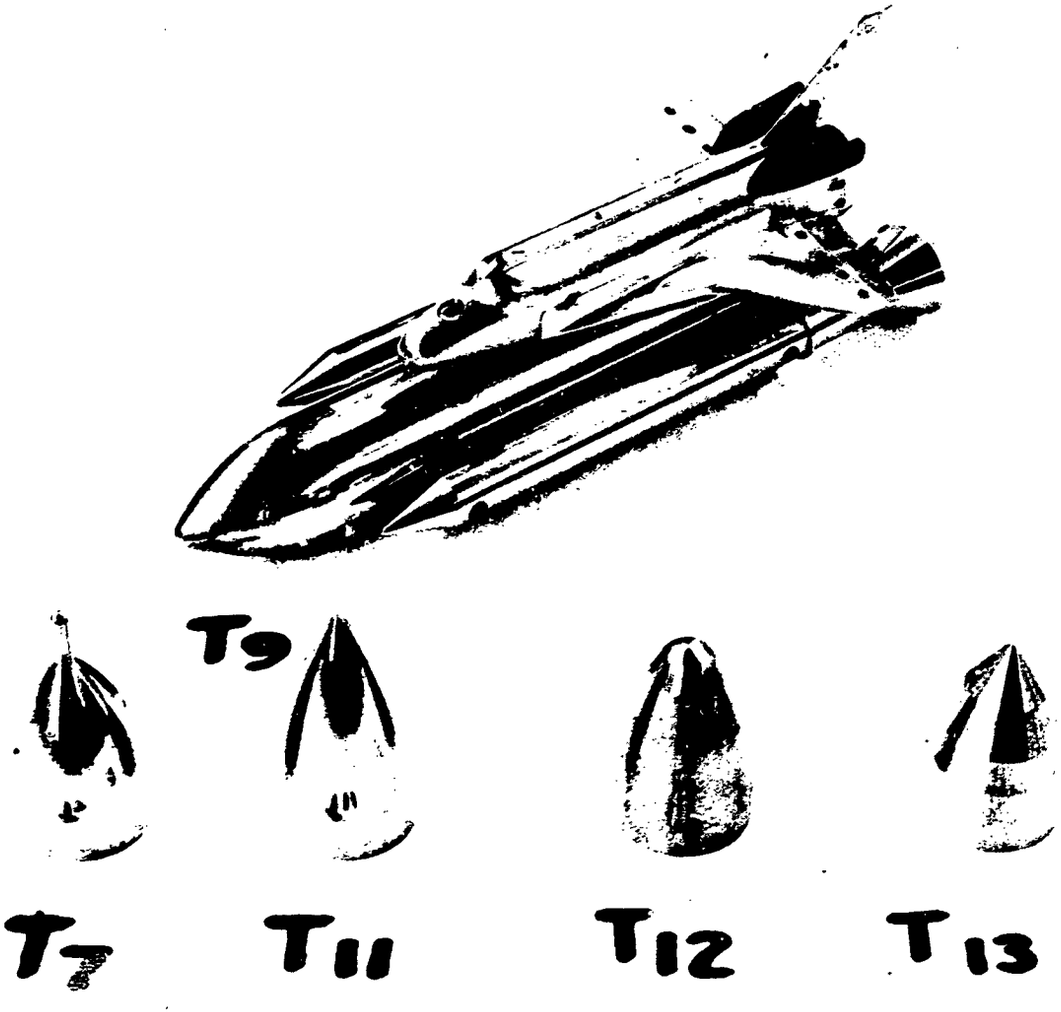


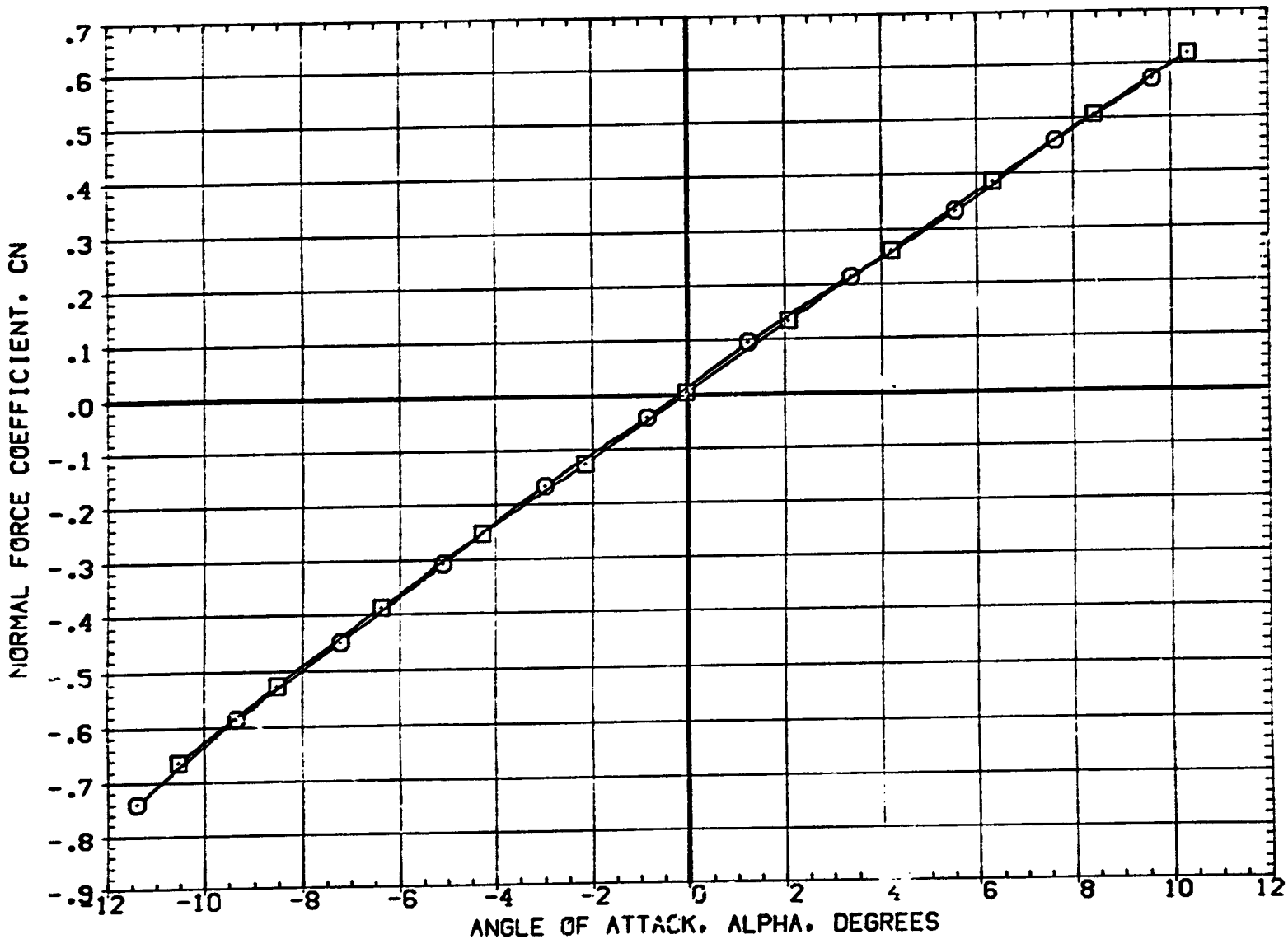
Figure 12. - Photograph of Basic Configuration With Different E.T. Nose Shapes.

DATA FIGURES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



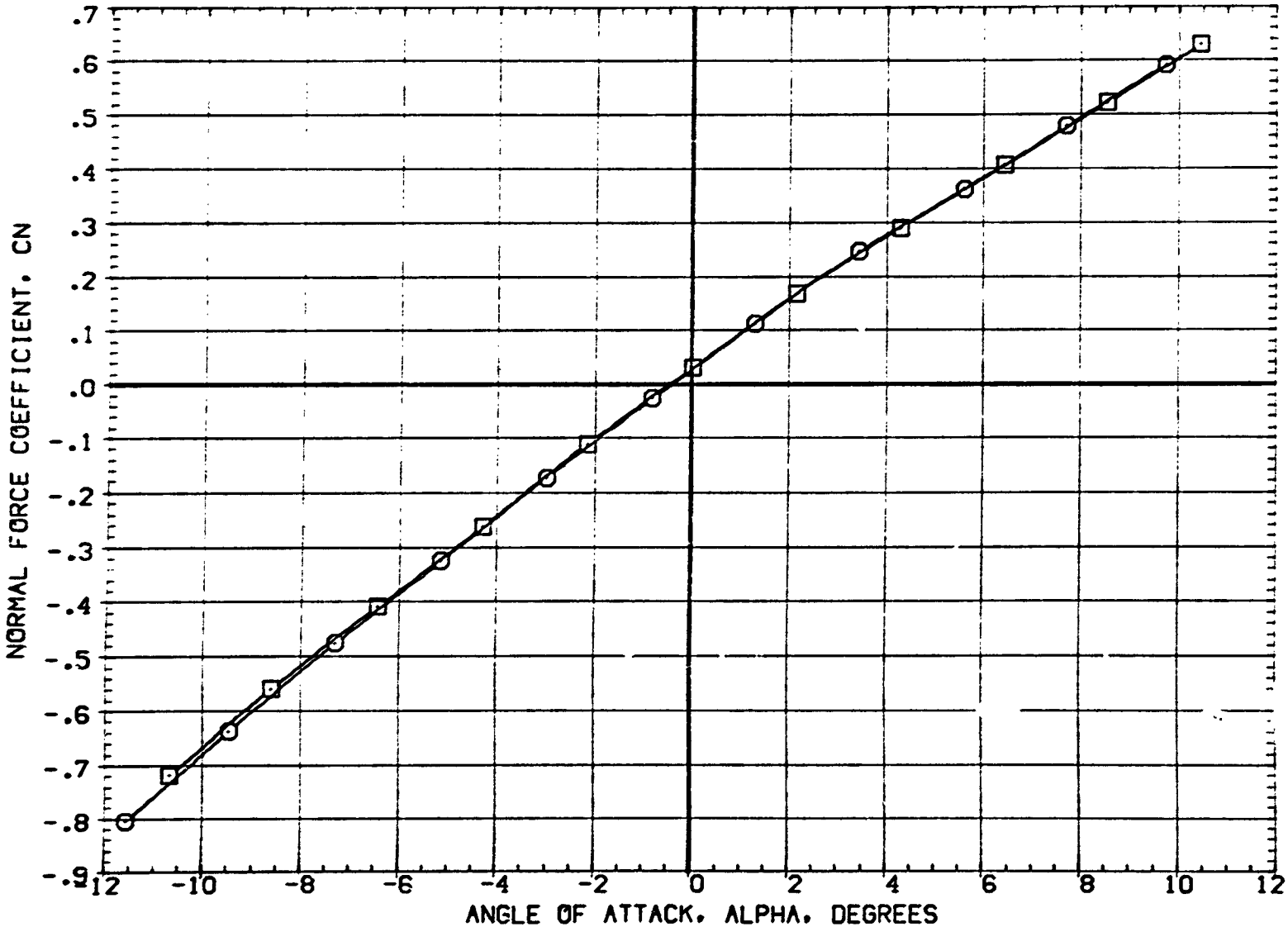
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(ESCOOO)	□	MSFC S73(A3)FC) (03)(T9)(S3)	.500	.140
(BBO:OO)	□	MSFC S73(A3)FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



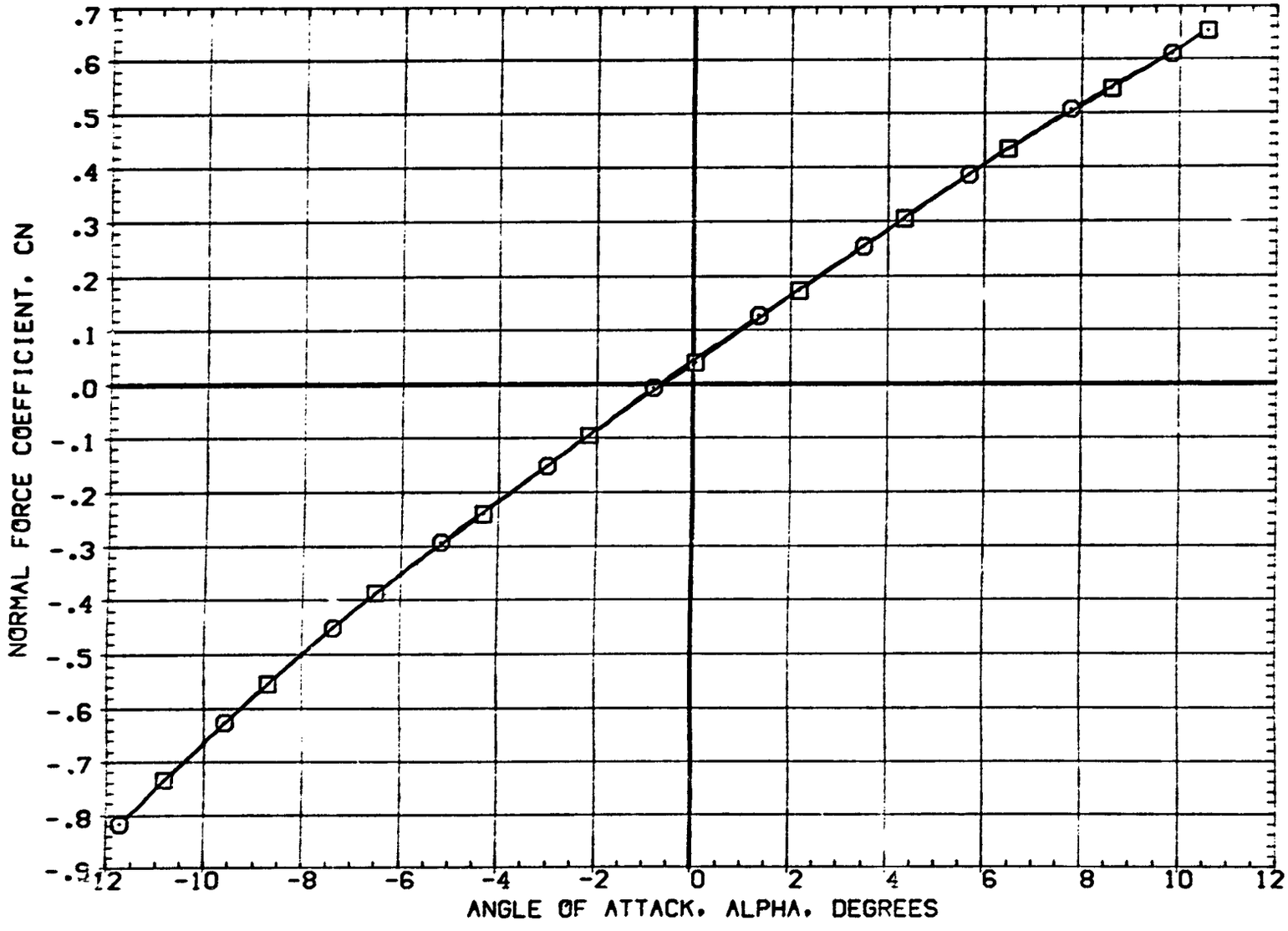
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC S73(1A3)FC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC S73(1A3)FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
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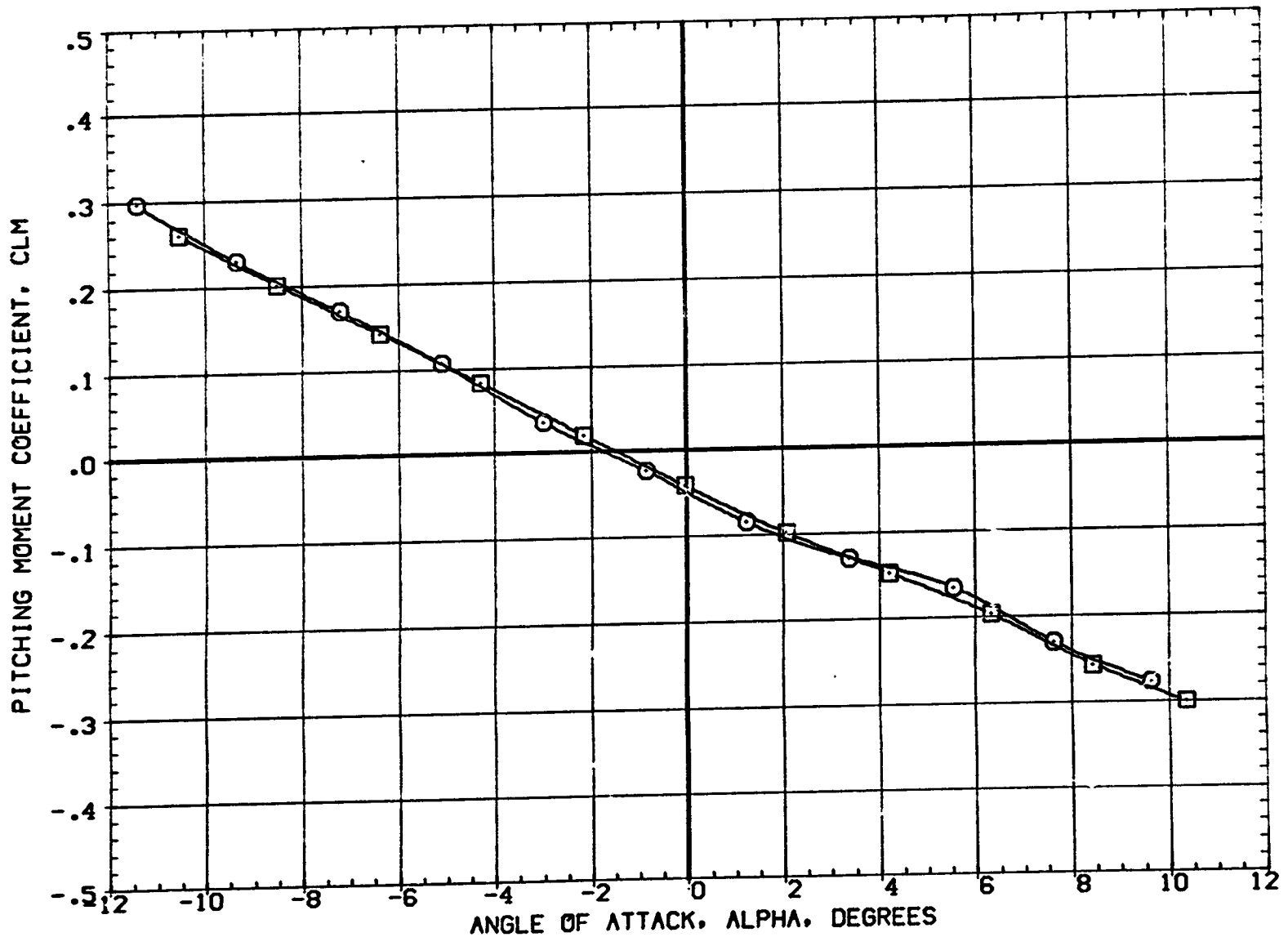
SCALE	.0040	



EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(IA3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
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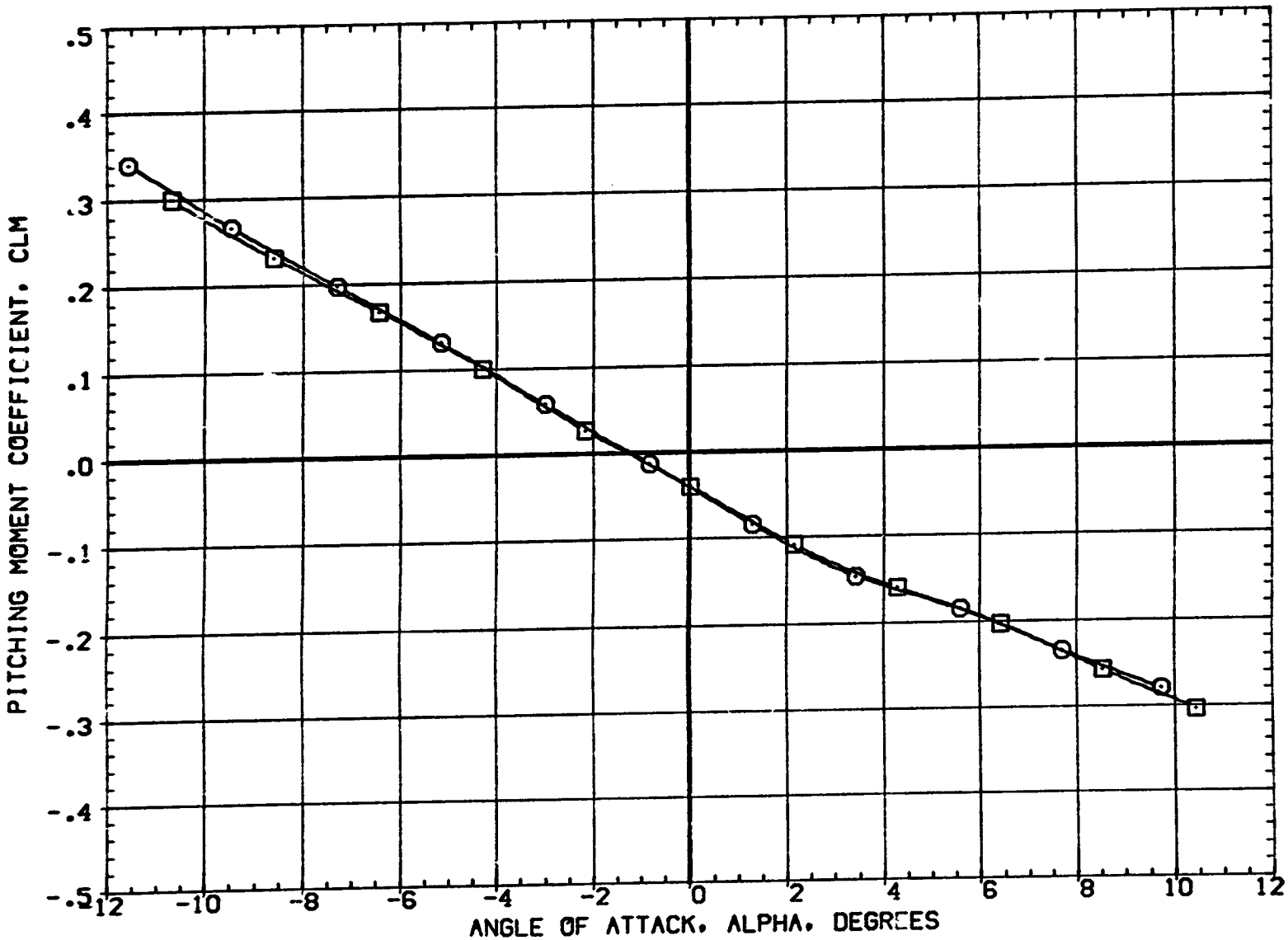
SCALE	.0040	



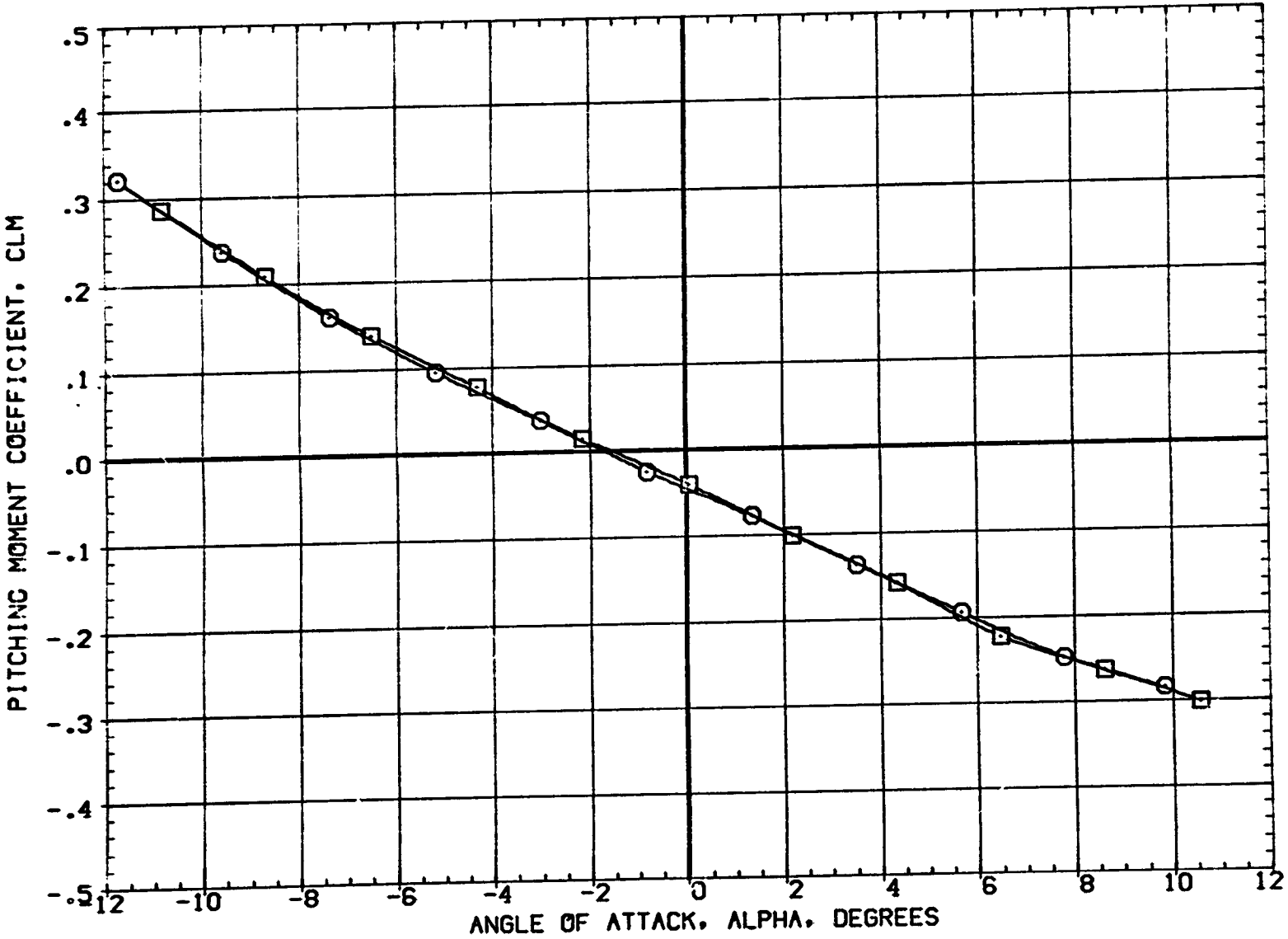
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



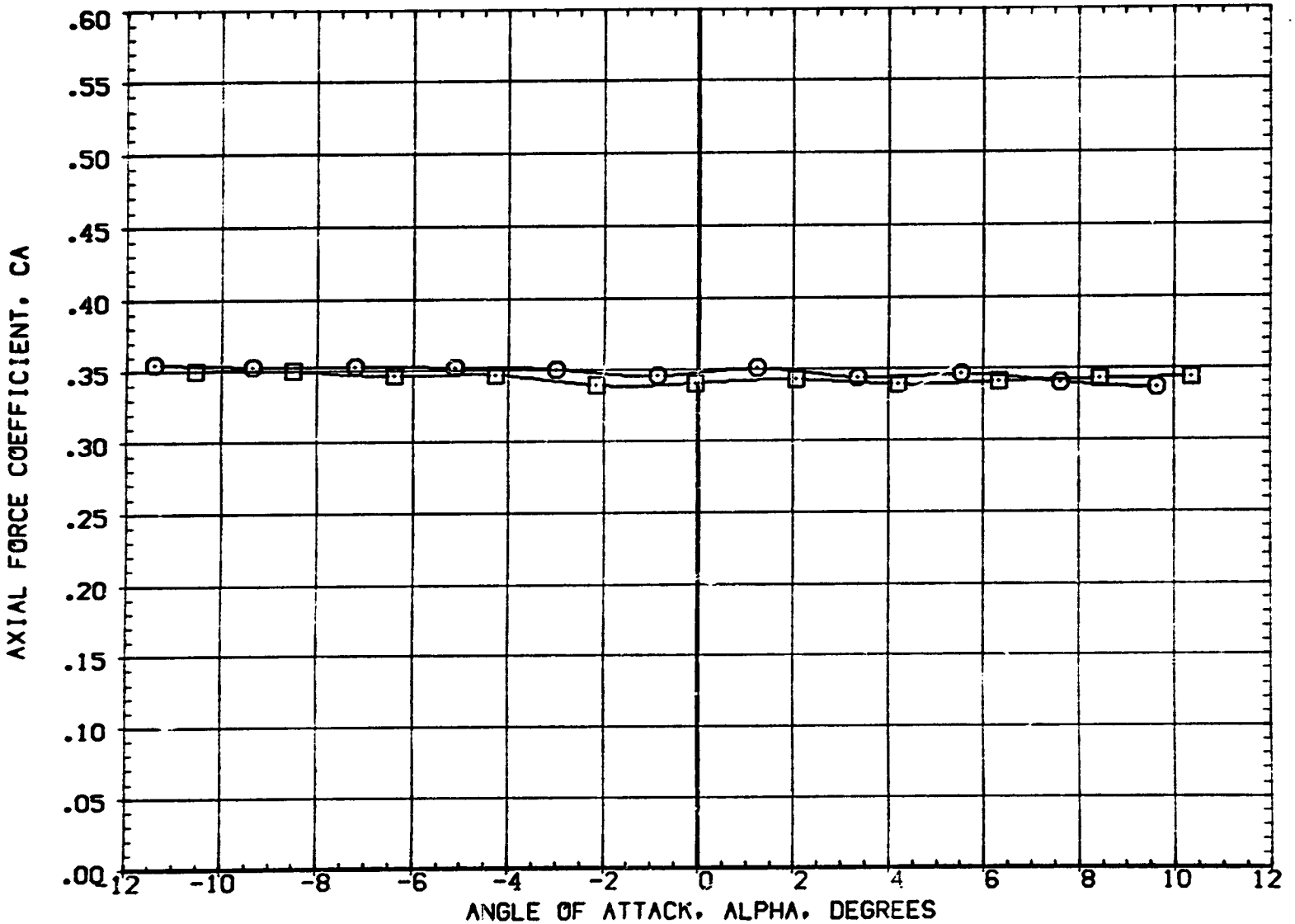
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



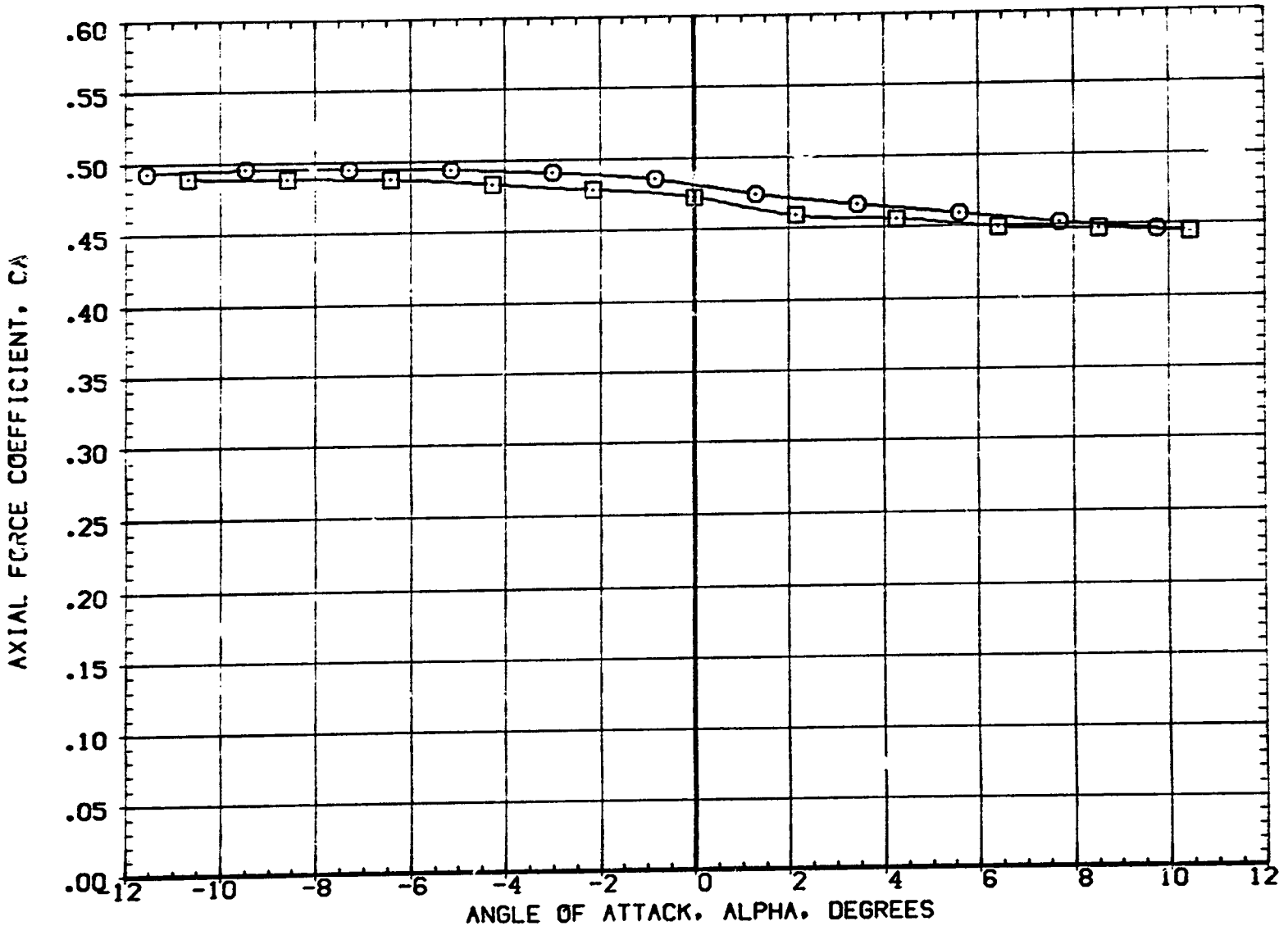
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A3)FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

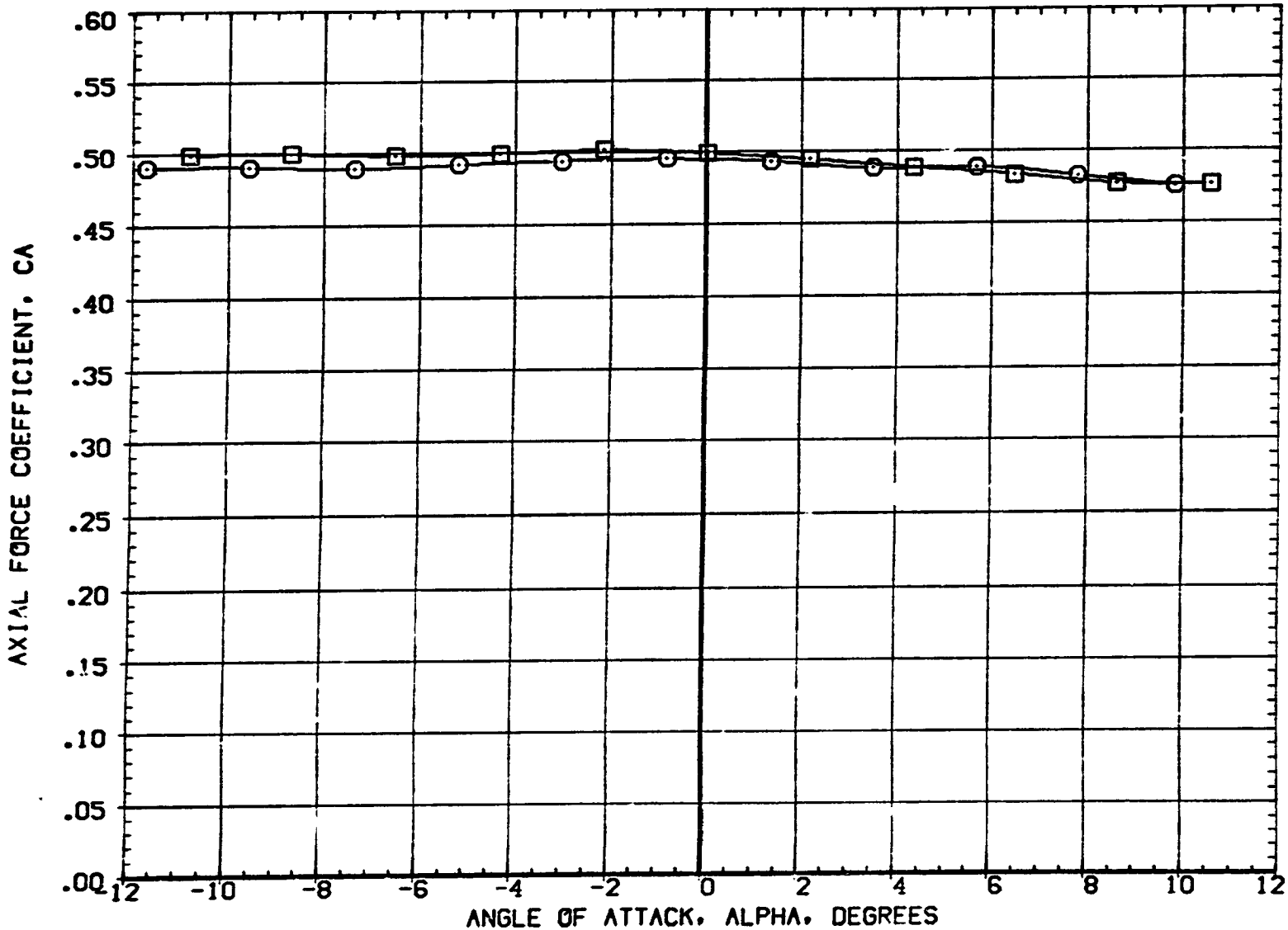


EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
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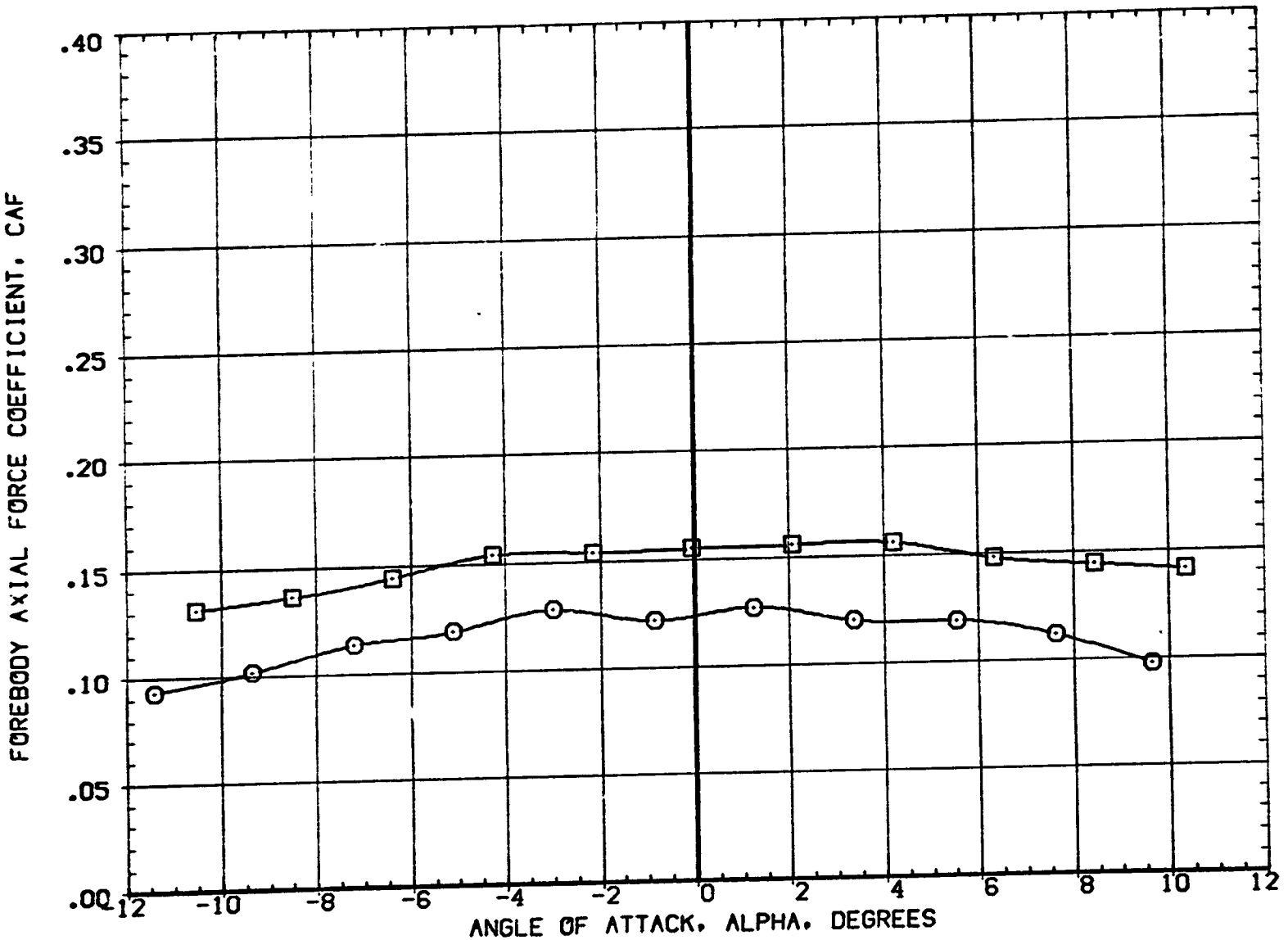


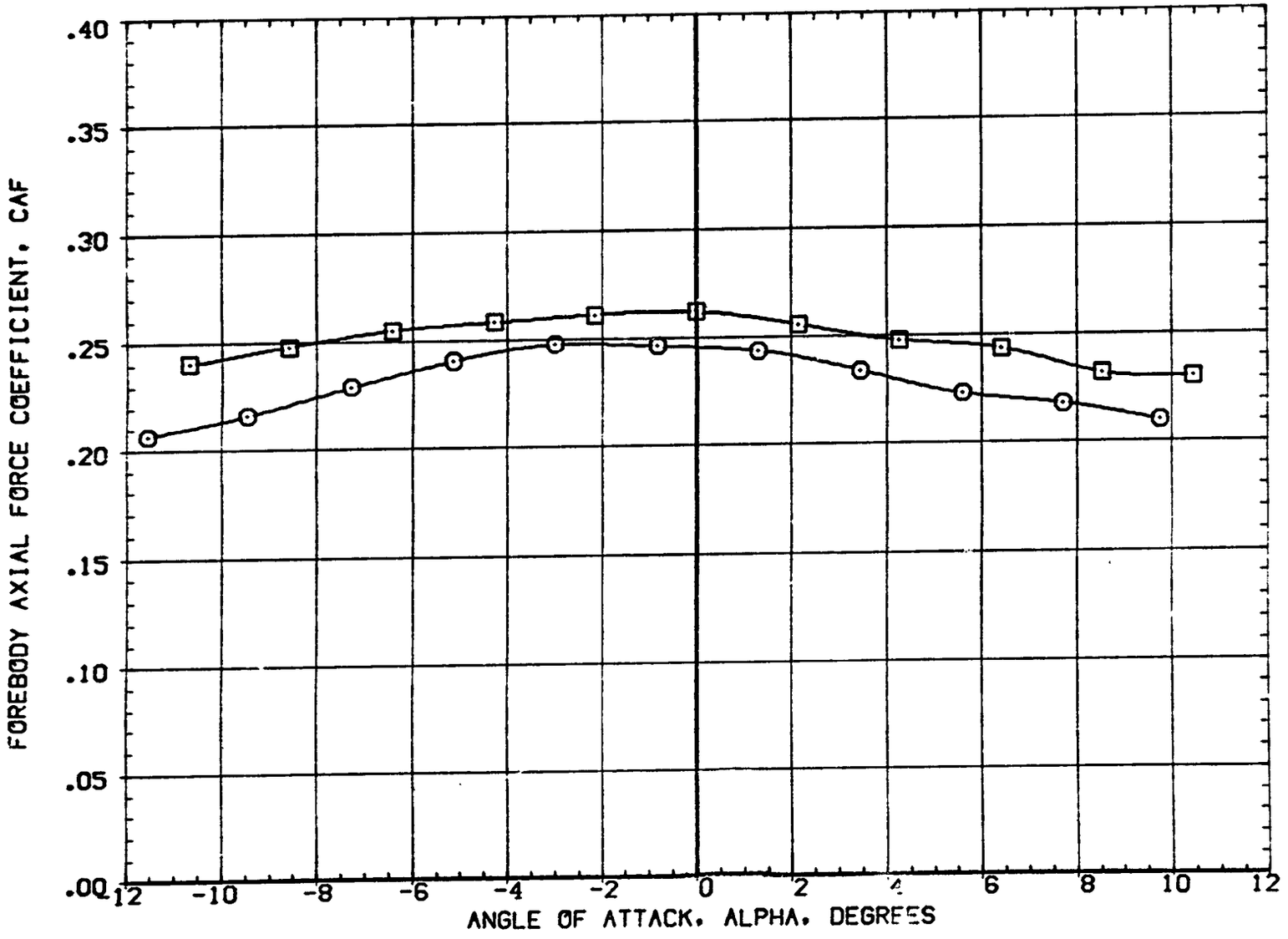
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	⊡	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	⊟	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



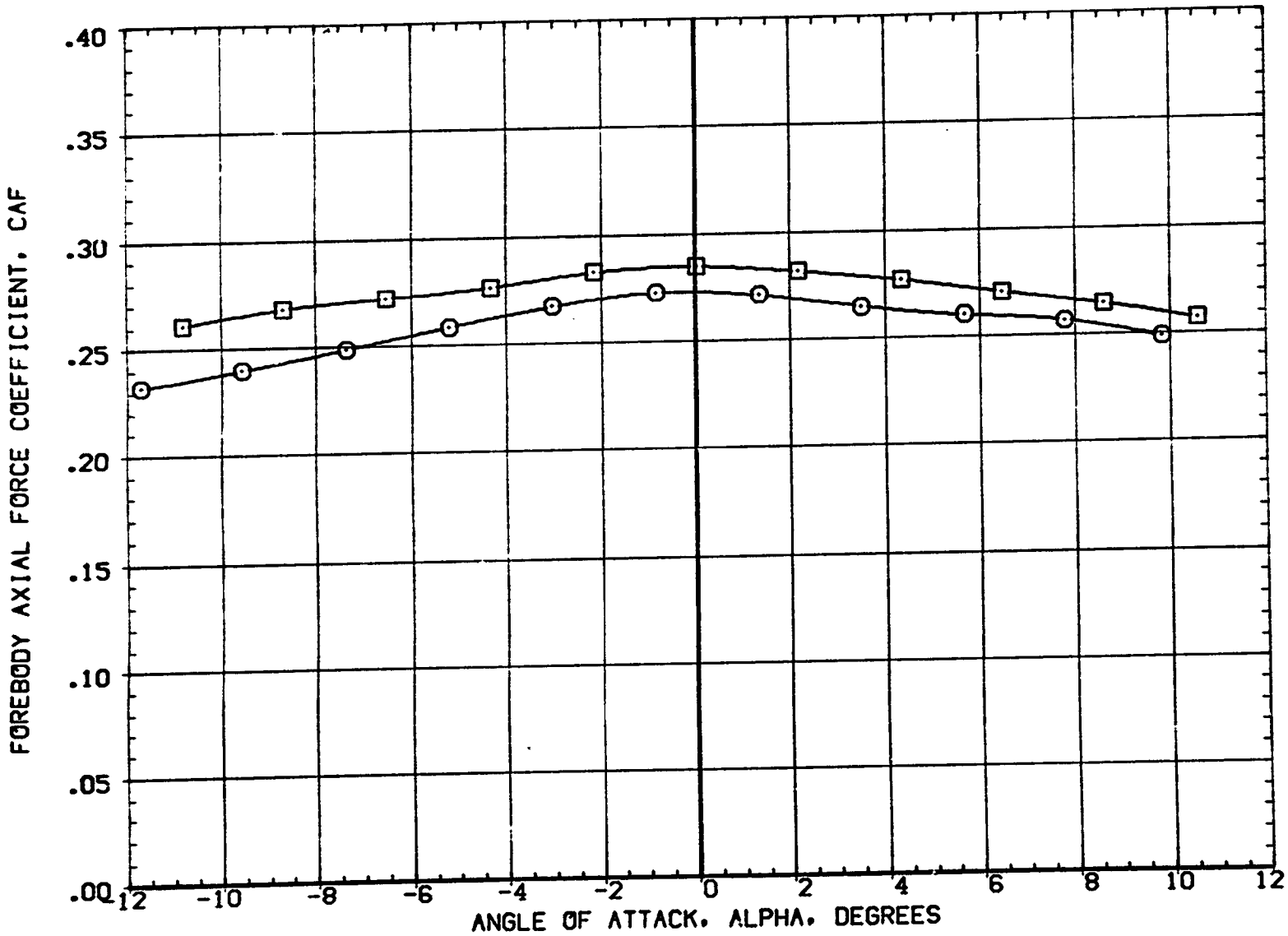
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E9C000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
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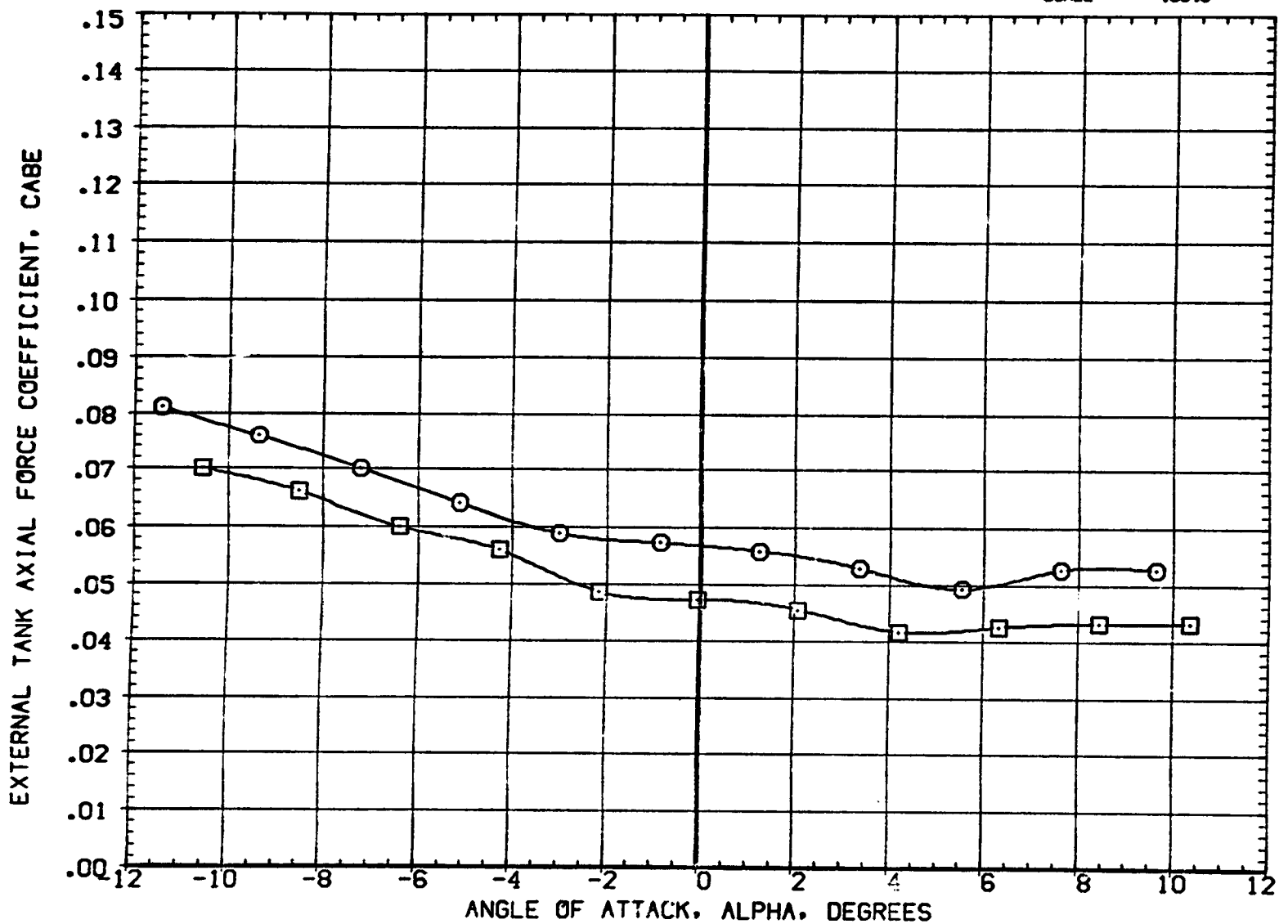
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



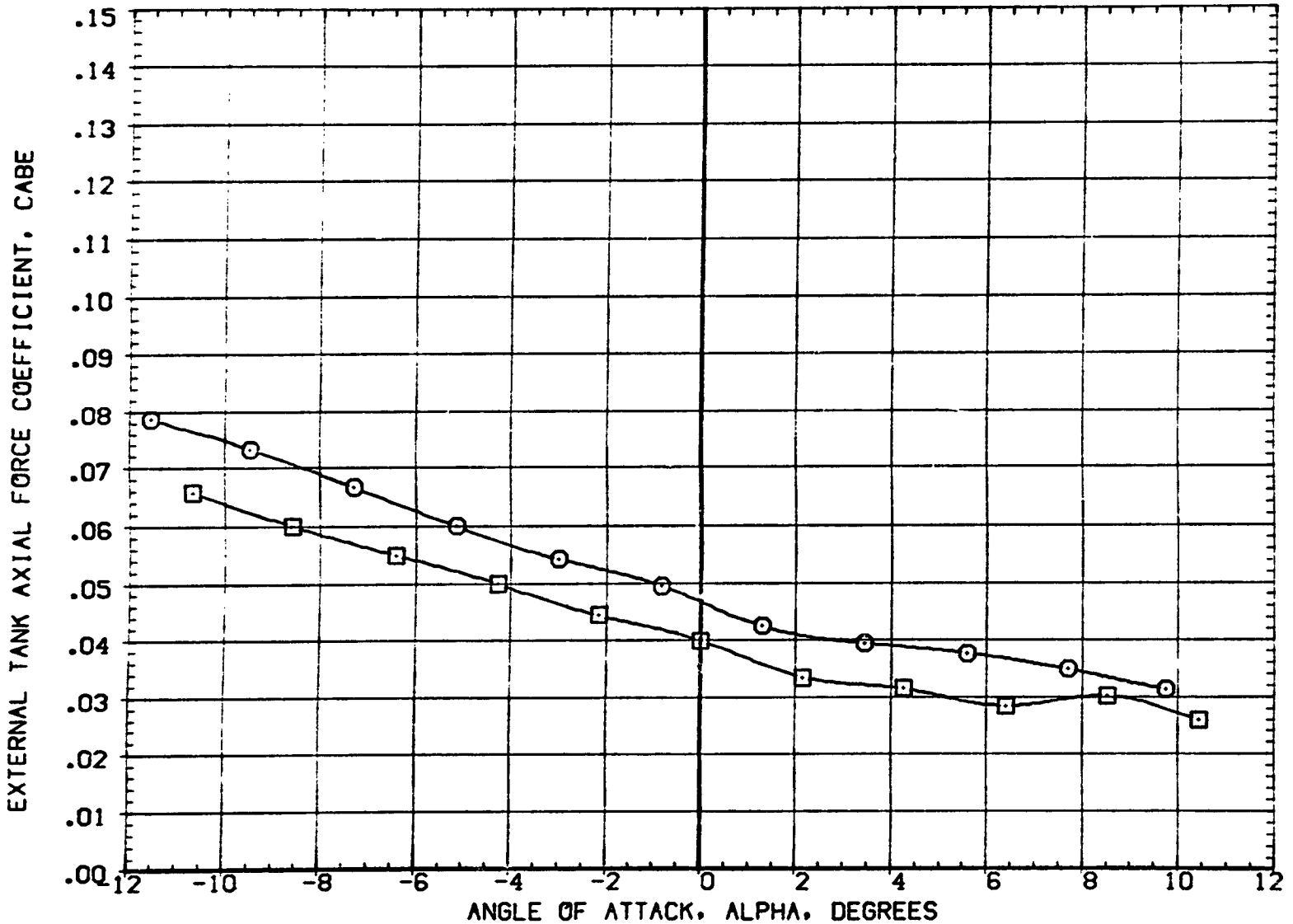
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100)	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



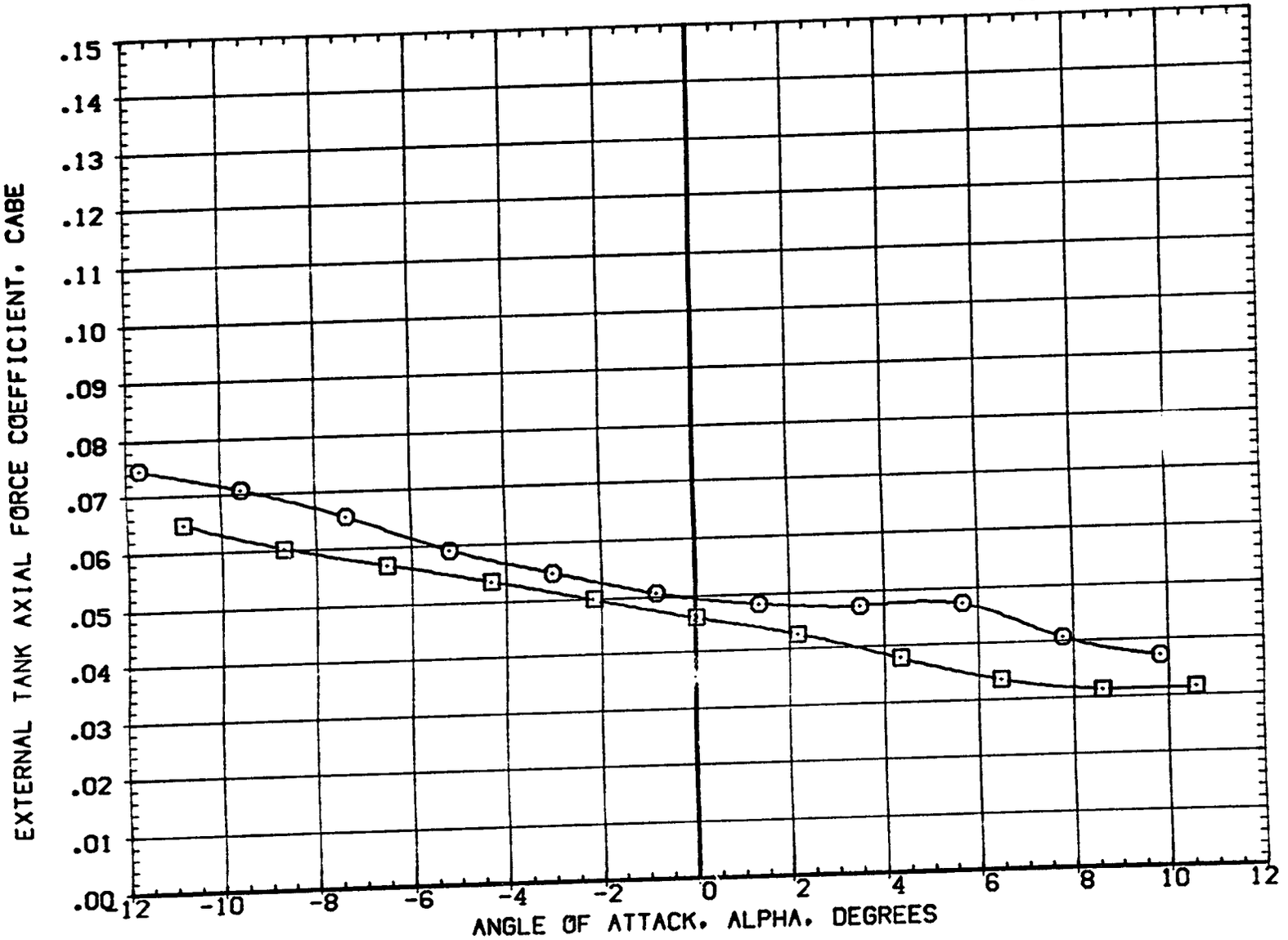
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100) □	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
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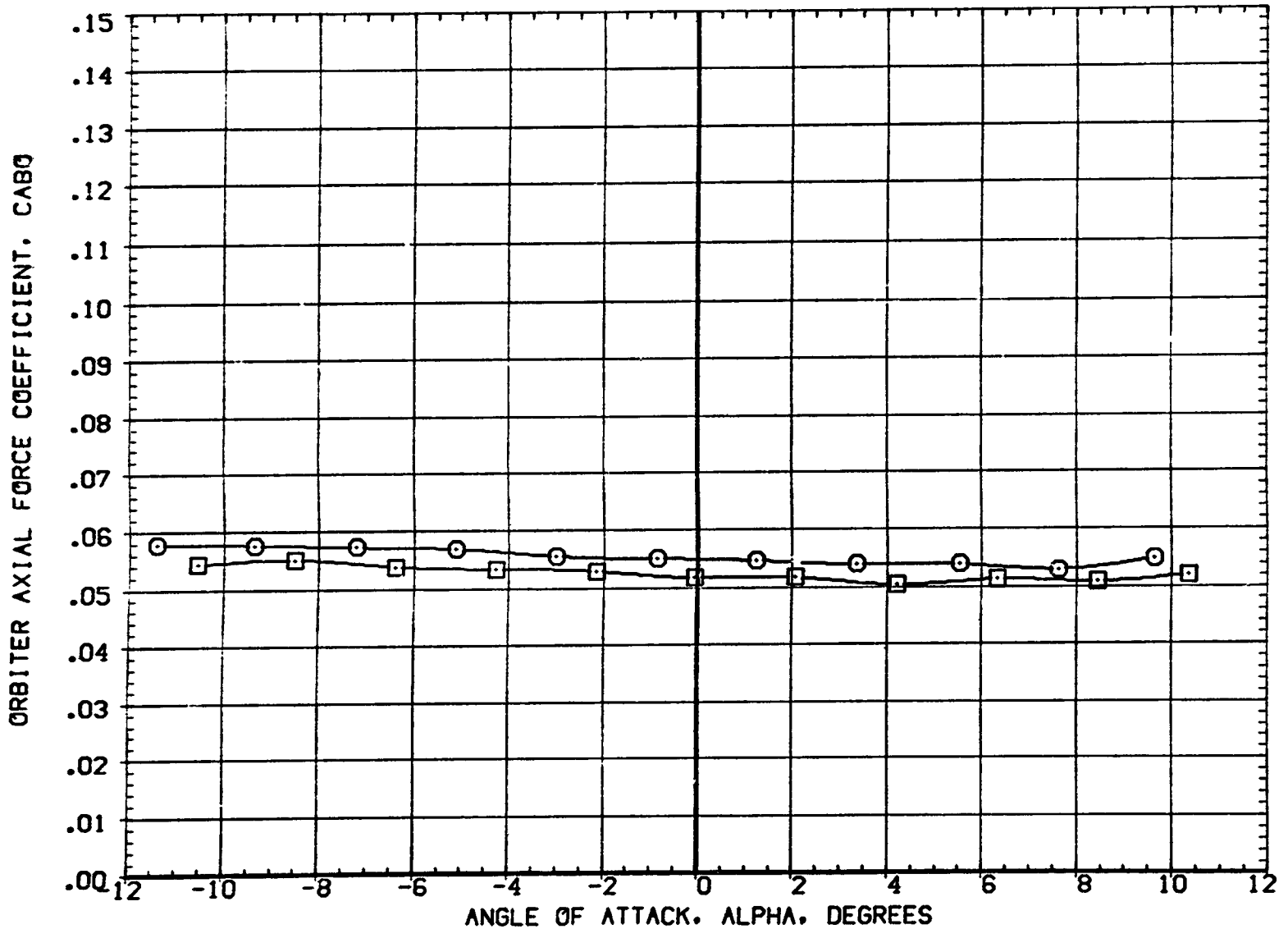
ZMRP	.0000	IN.
SCALE	.0040	



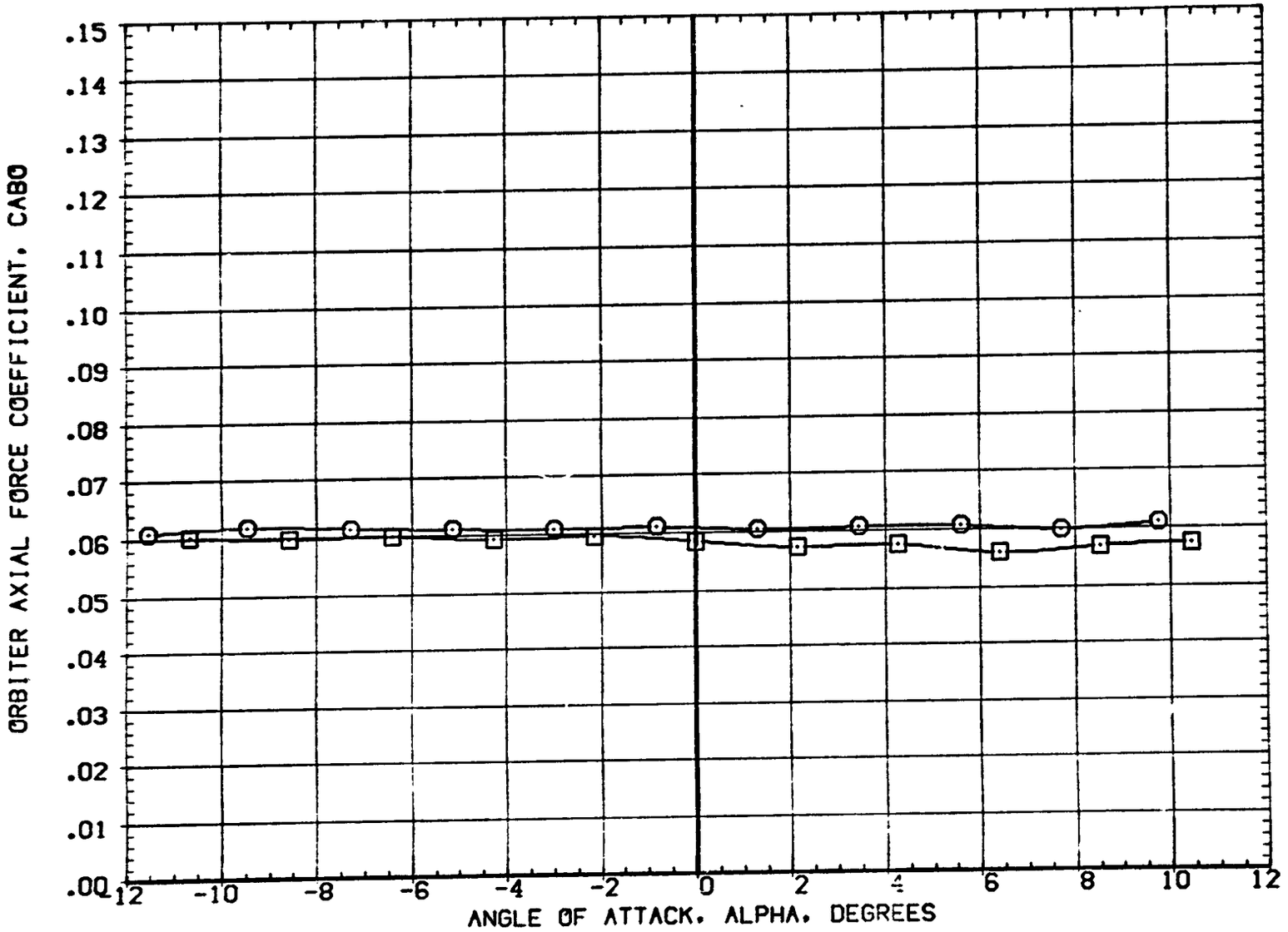
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A3)FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



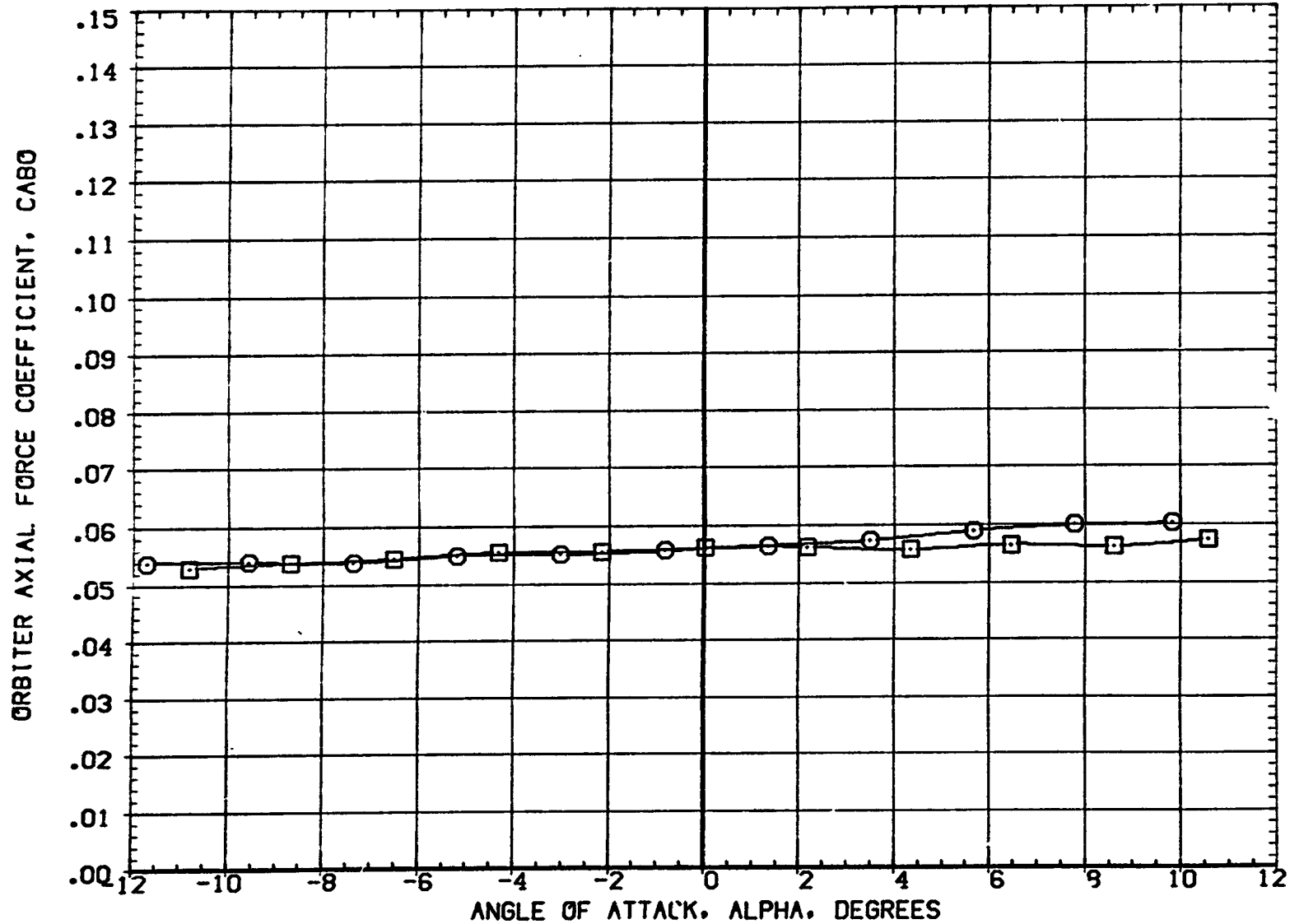
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A31FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



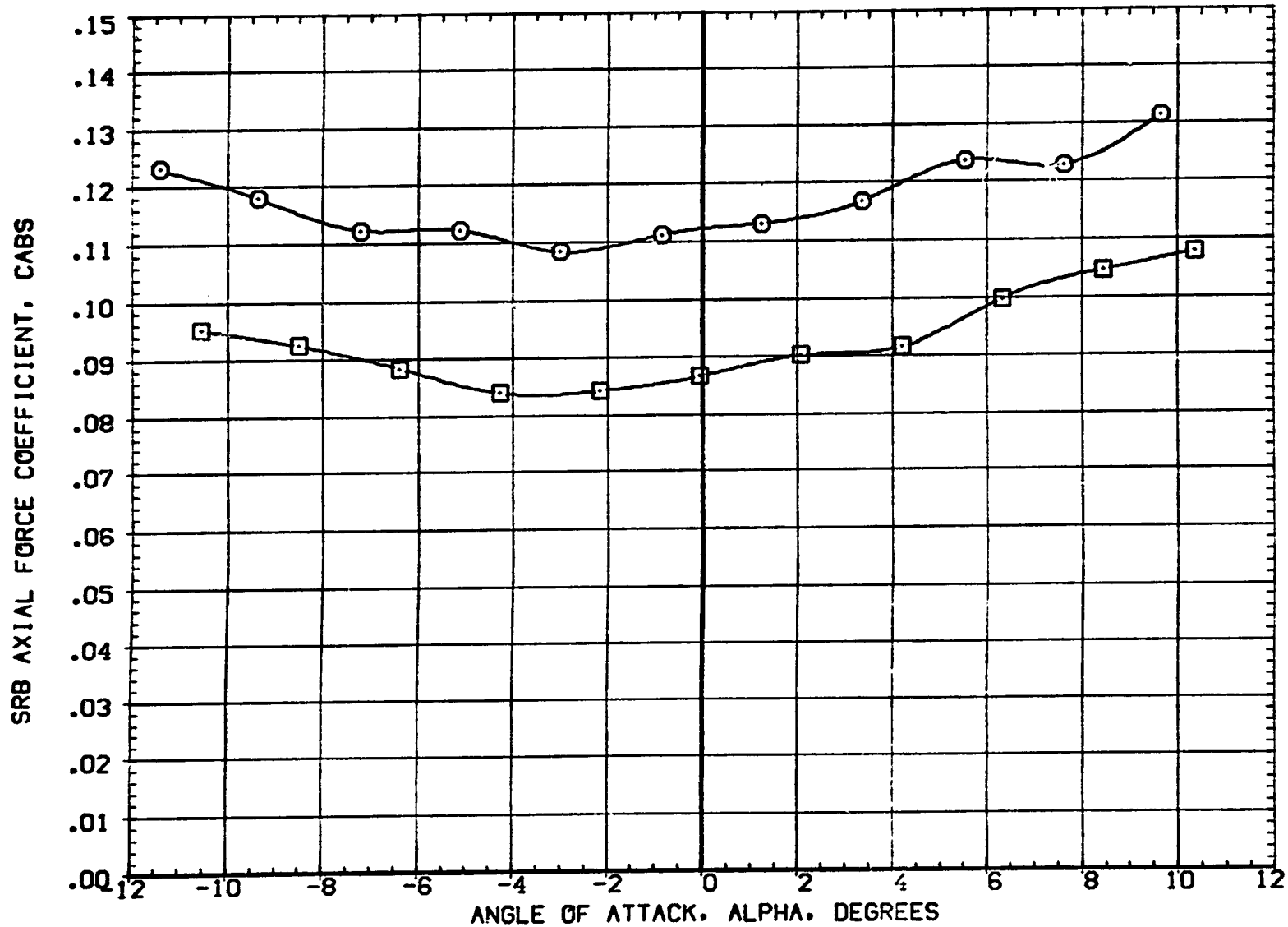
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



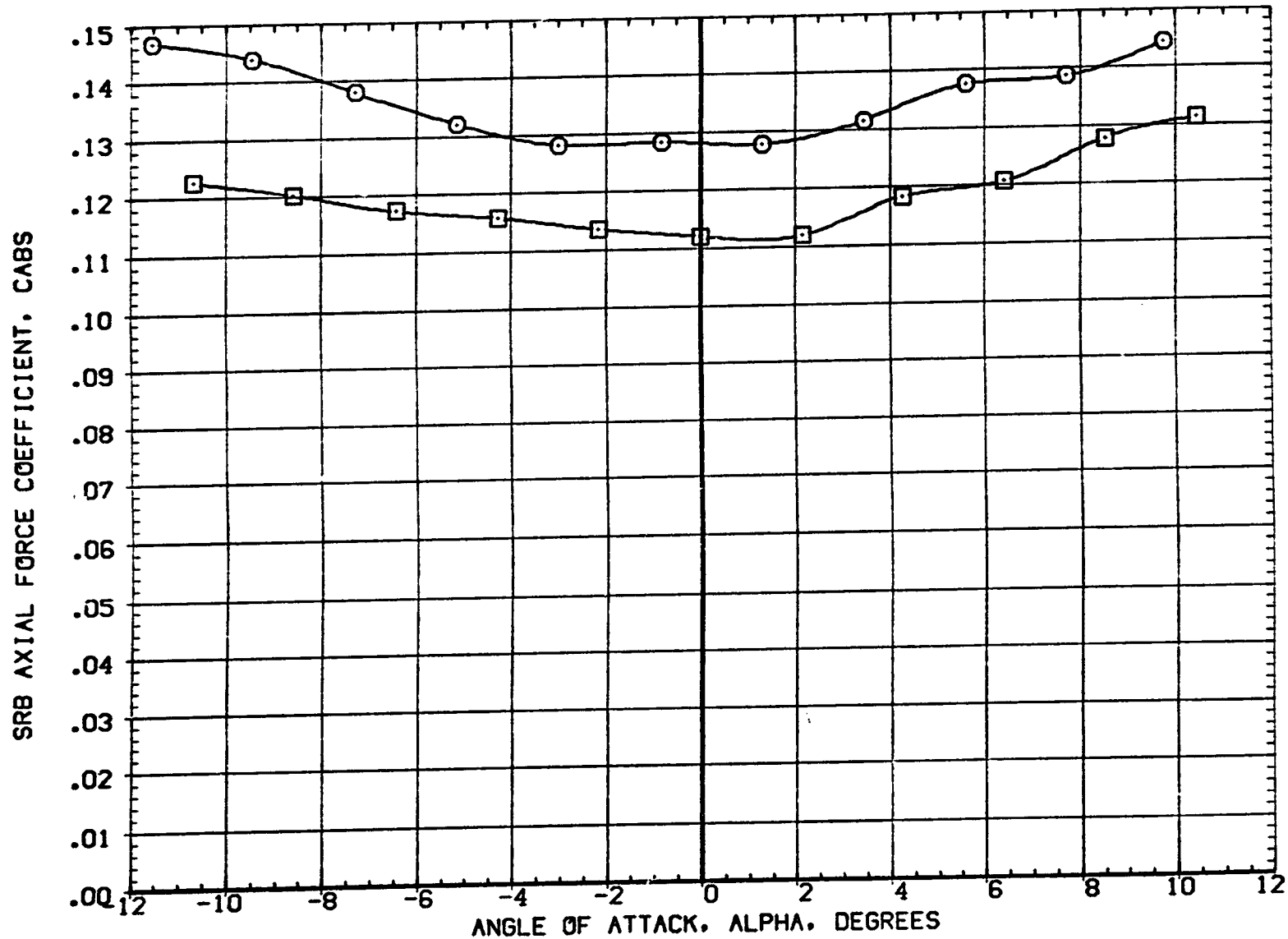
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140
(B90100)	□	MSFC 573(1A3IFC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



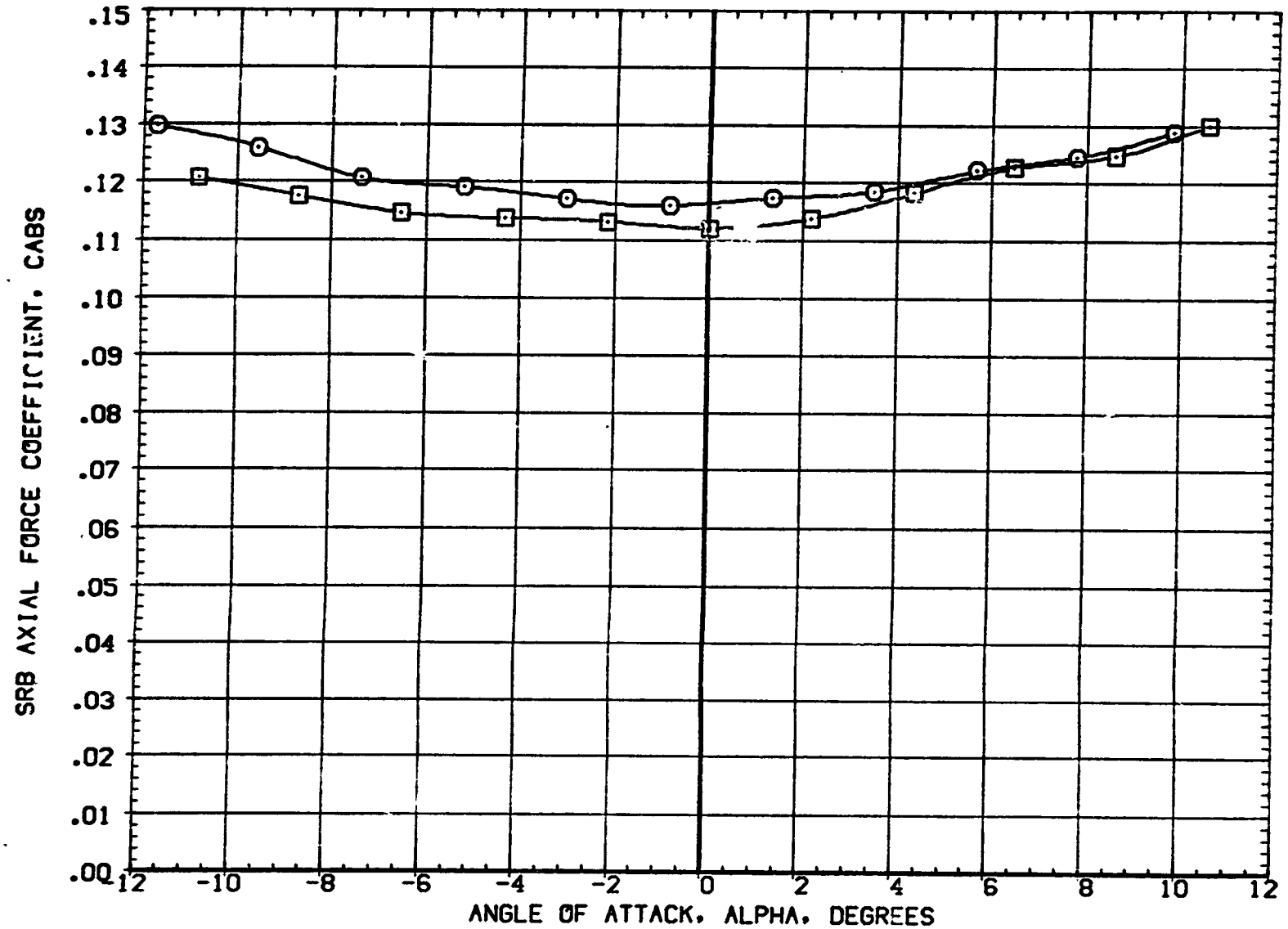
EFFECT OF GRIT ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ
(E90000)		MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140
(B90100)		MSFC 573(1A3)FC) (03)(T9)(S3) G	.500	.140

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



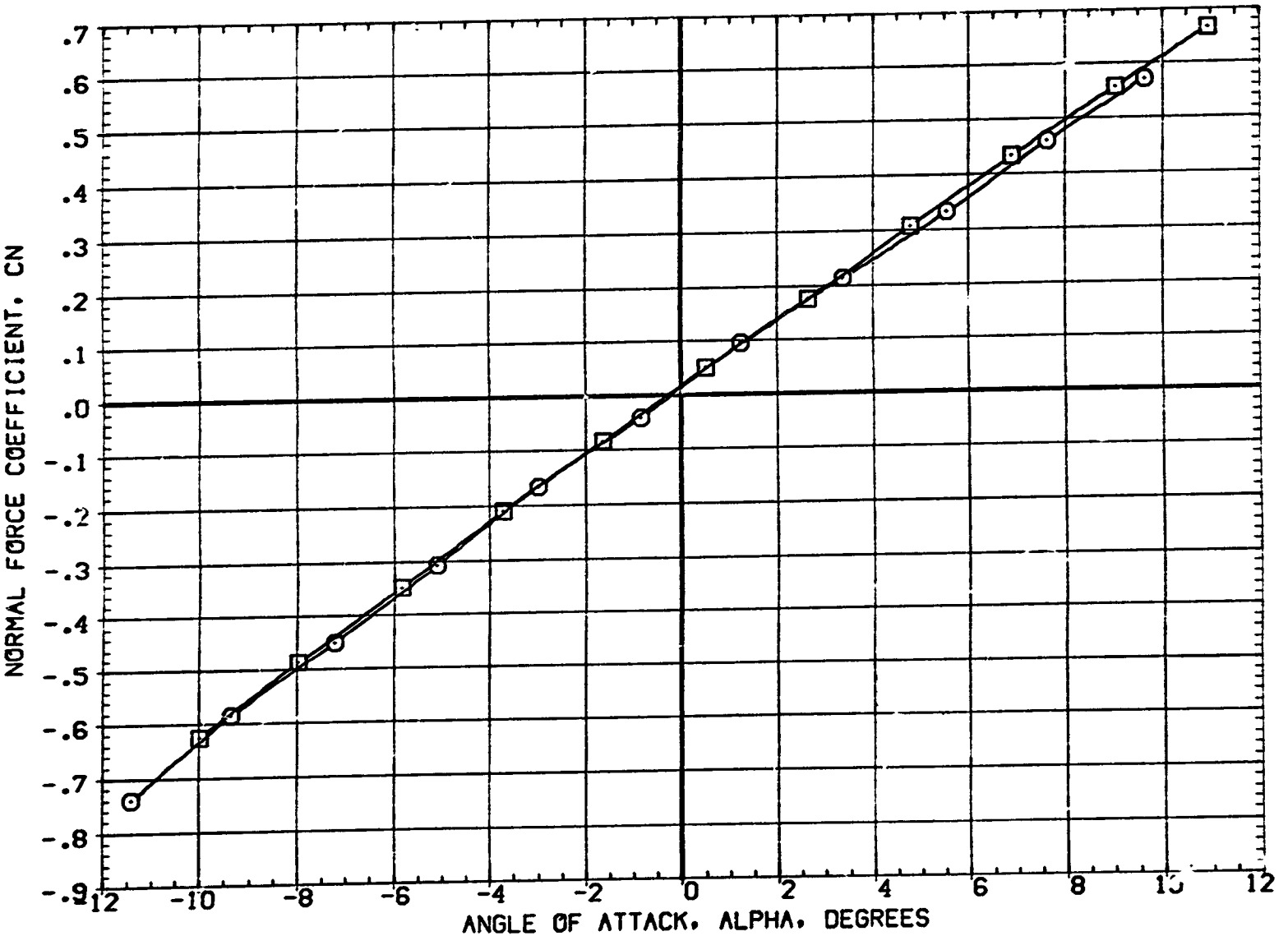
EFFECT OF GRI: ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



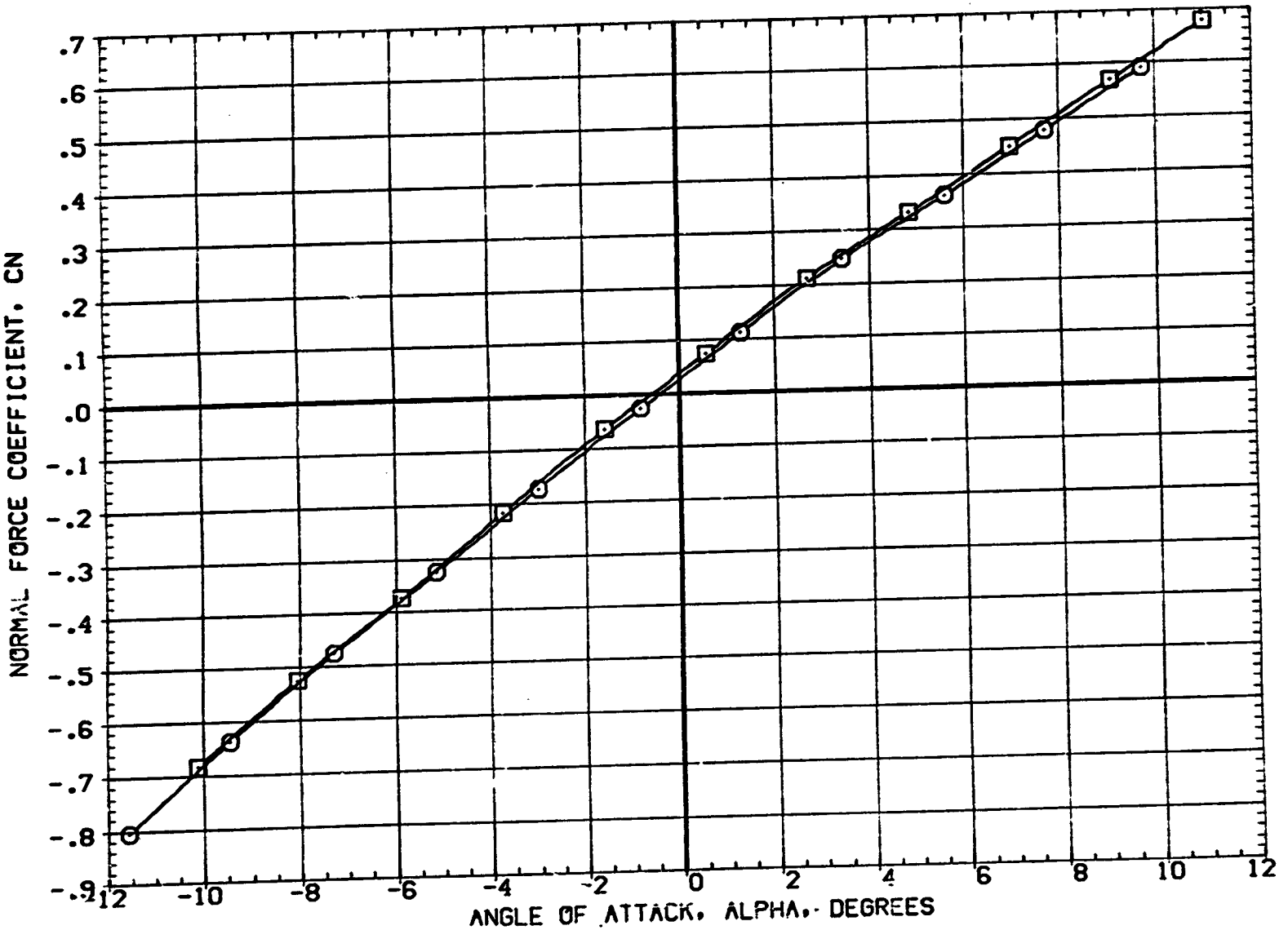
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



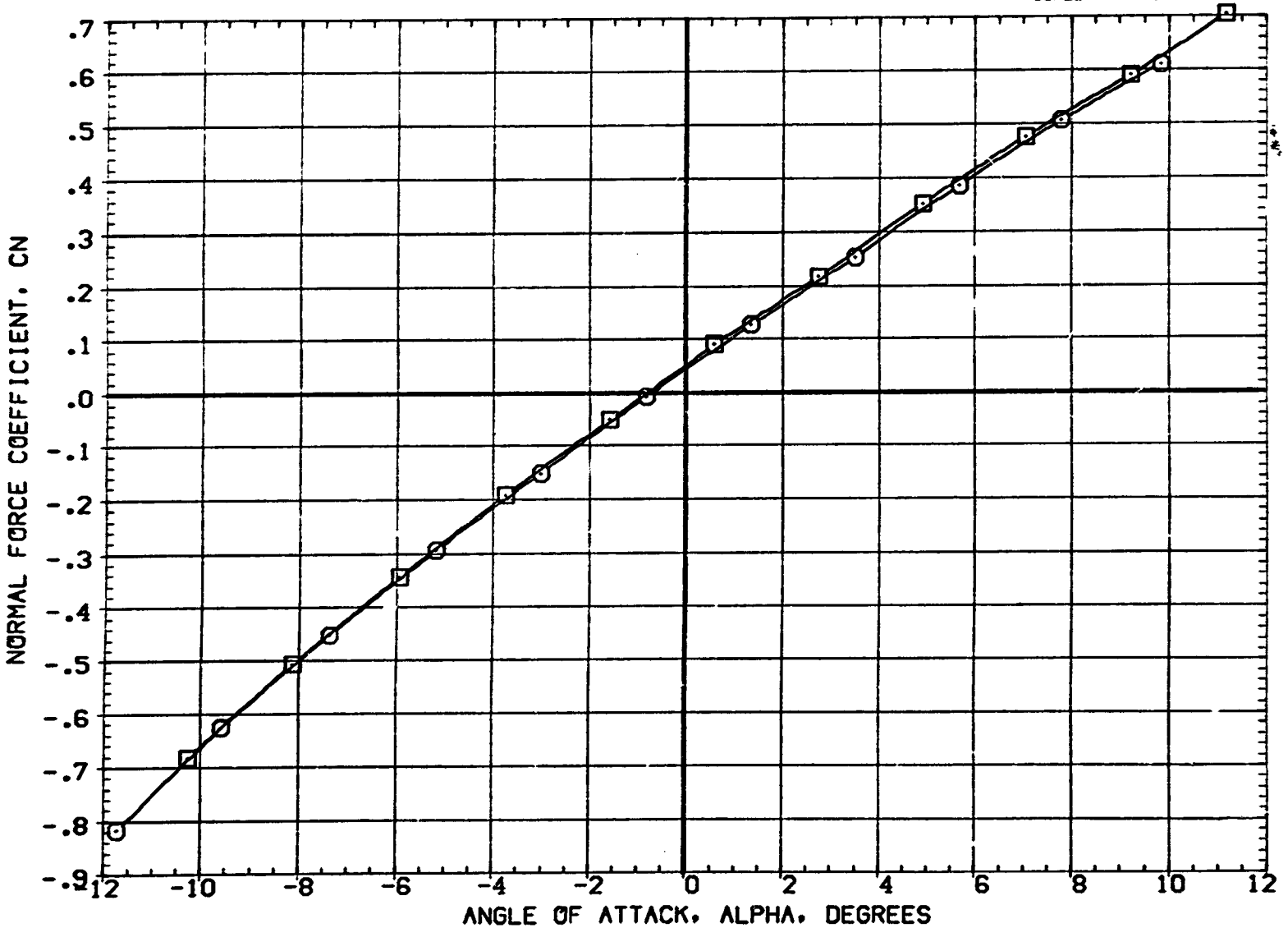
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



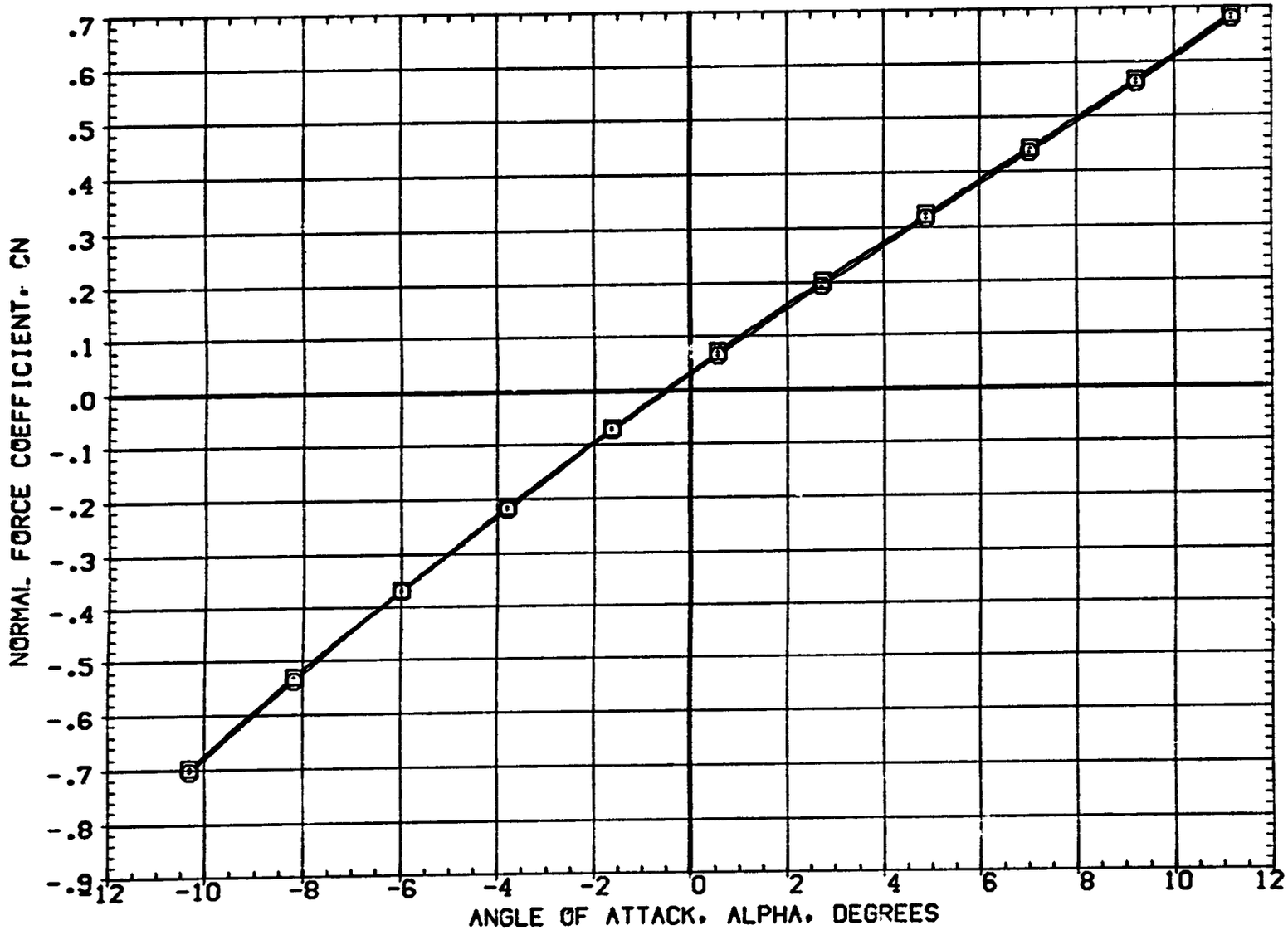
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A3IFC) (M3)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A3IFC) (D3)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



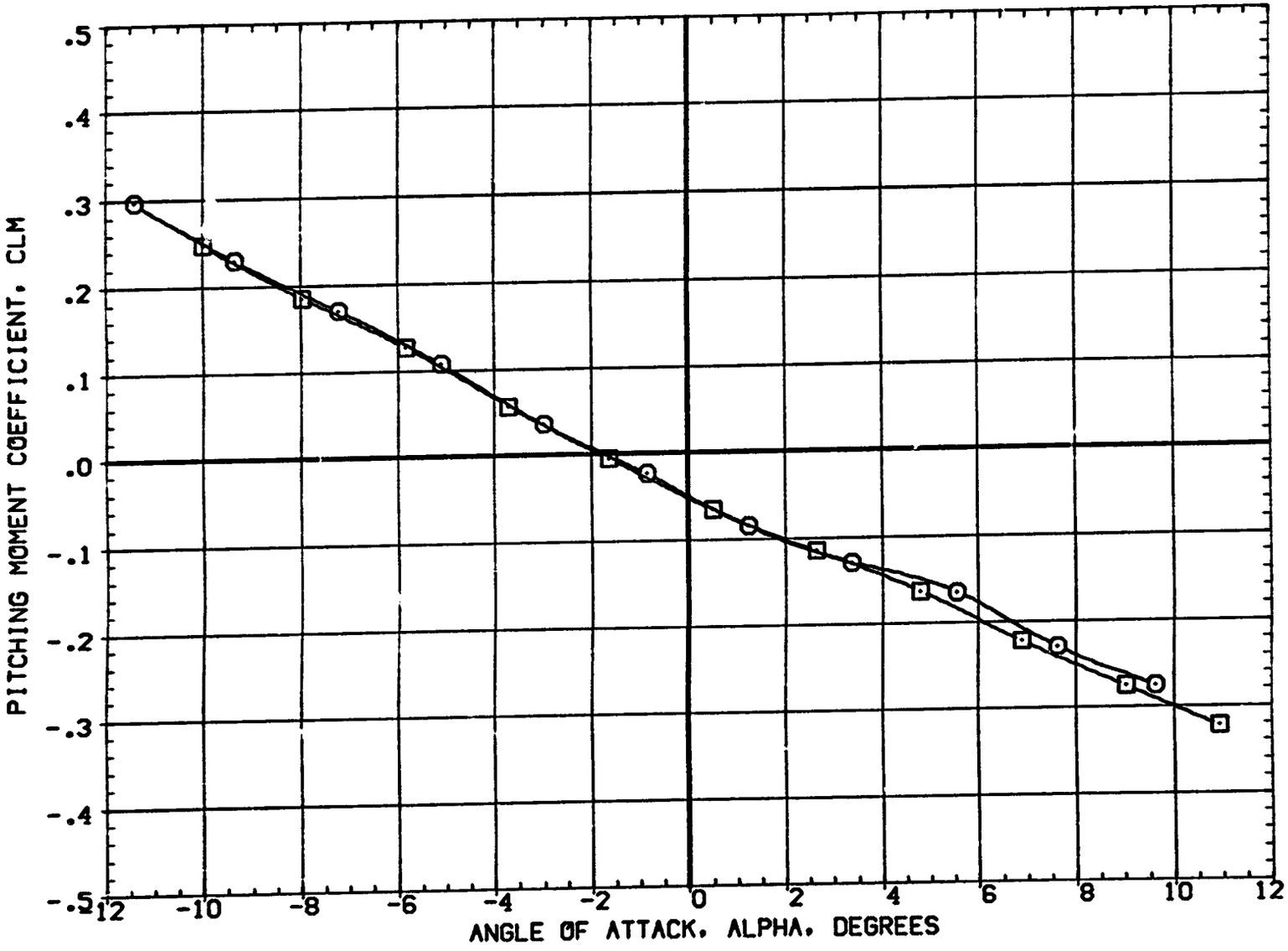
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



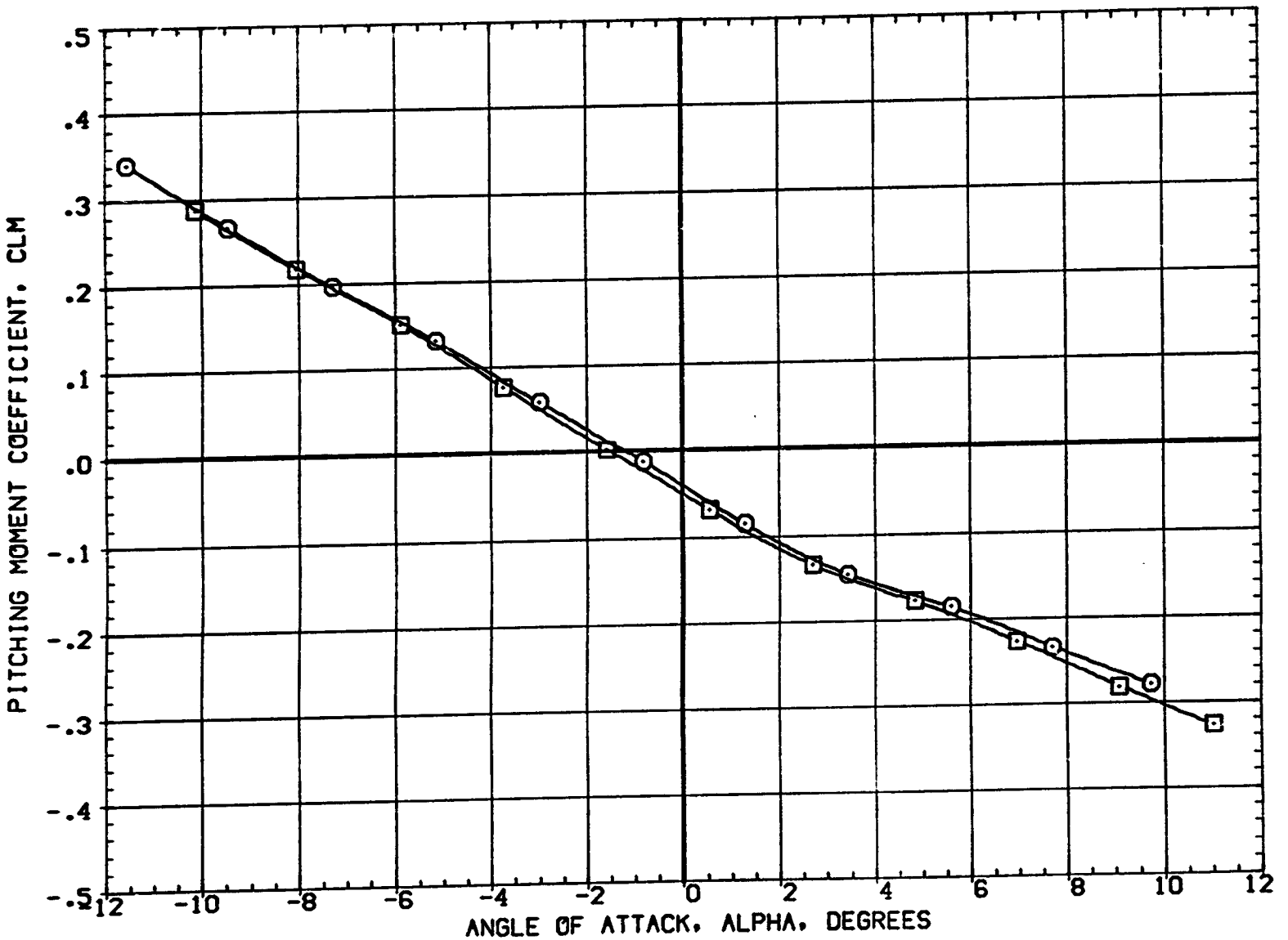
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



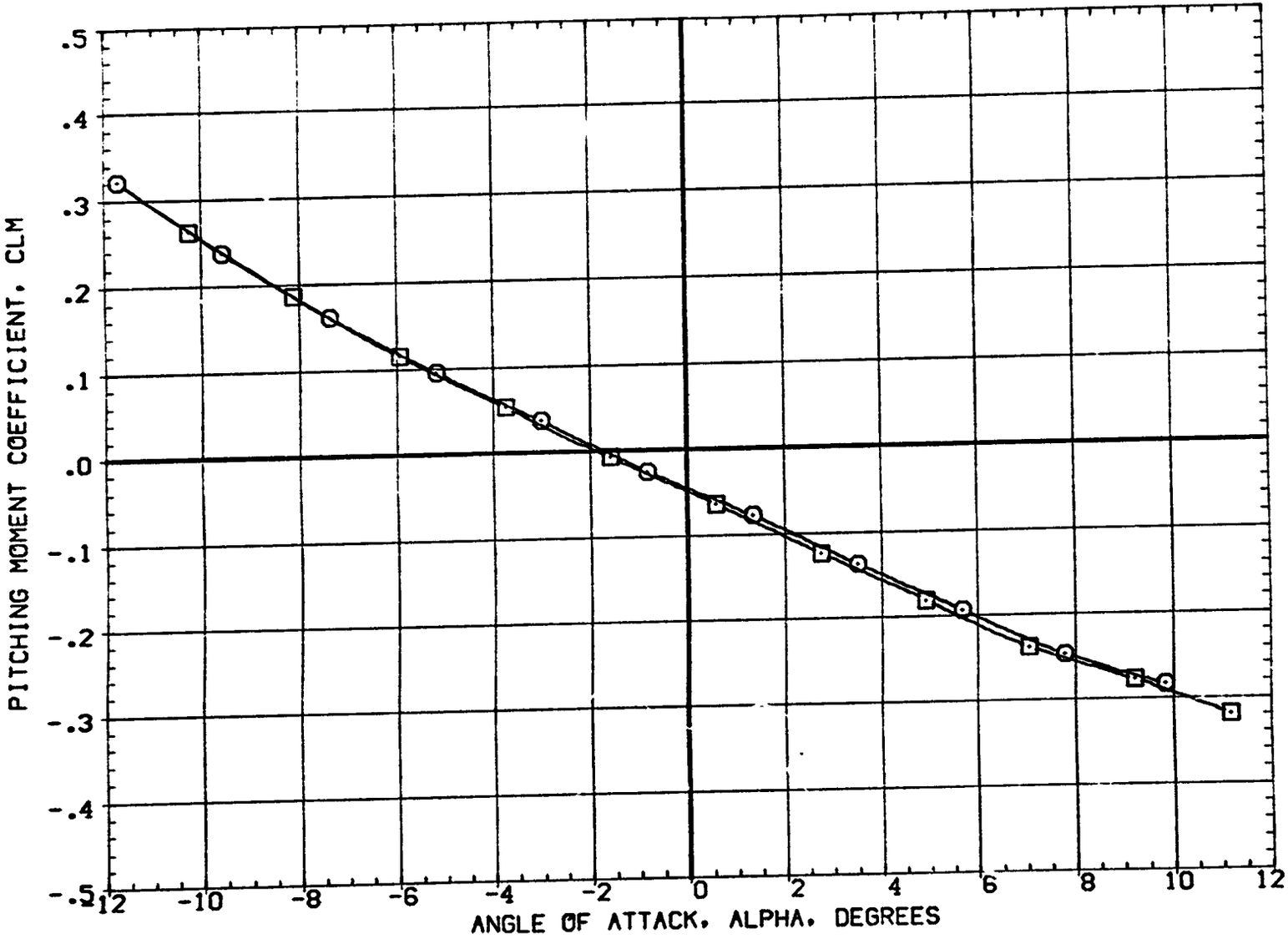
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



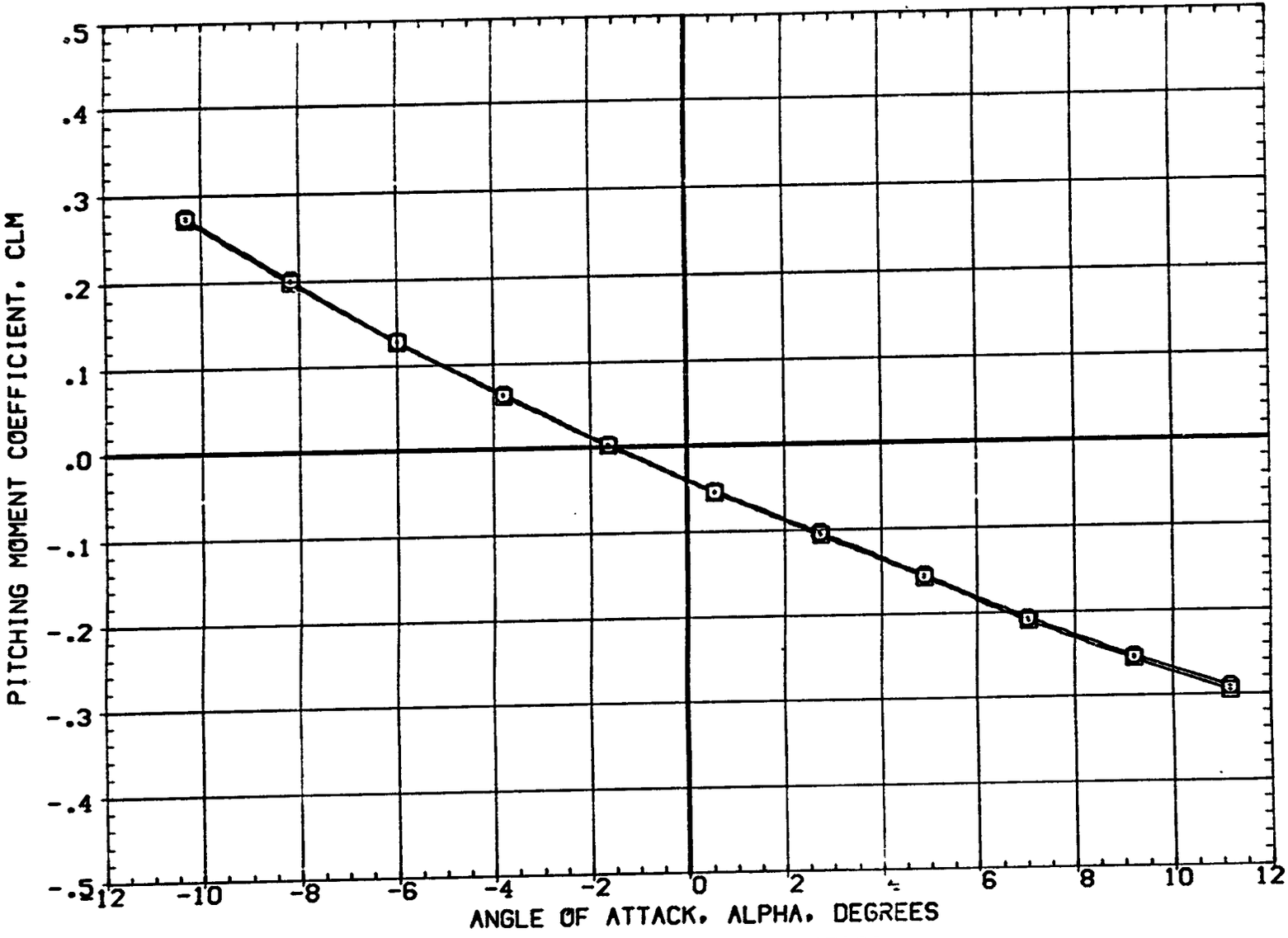
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(390000) ○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(890200) □	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



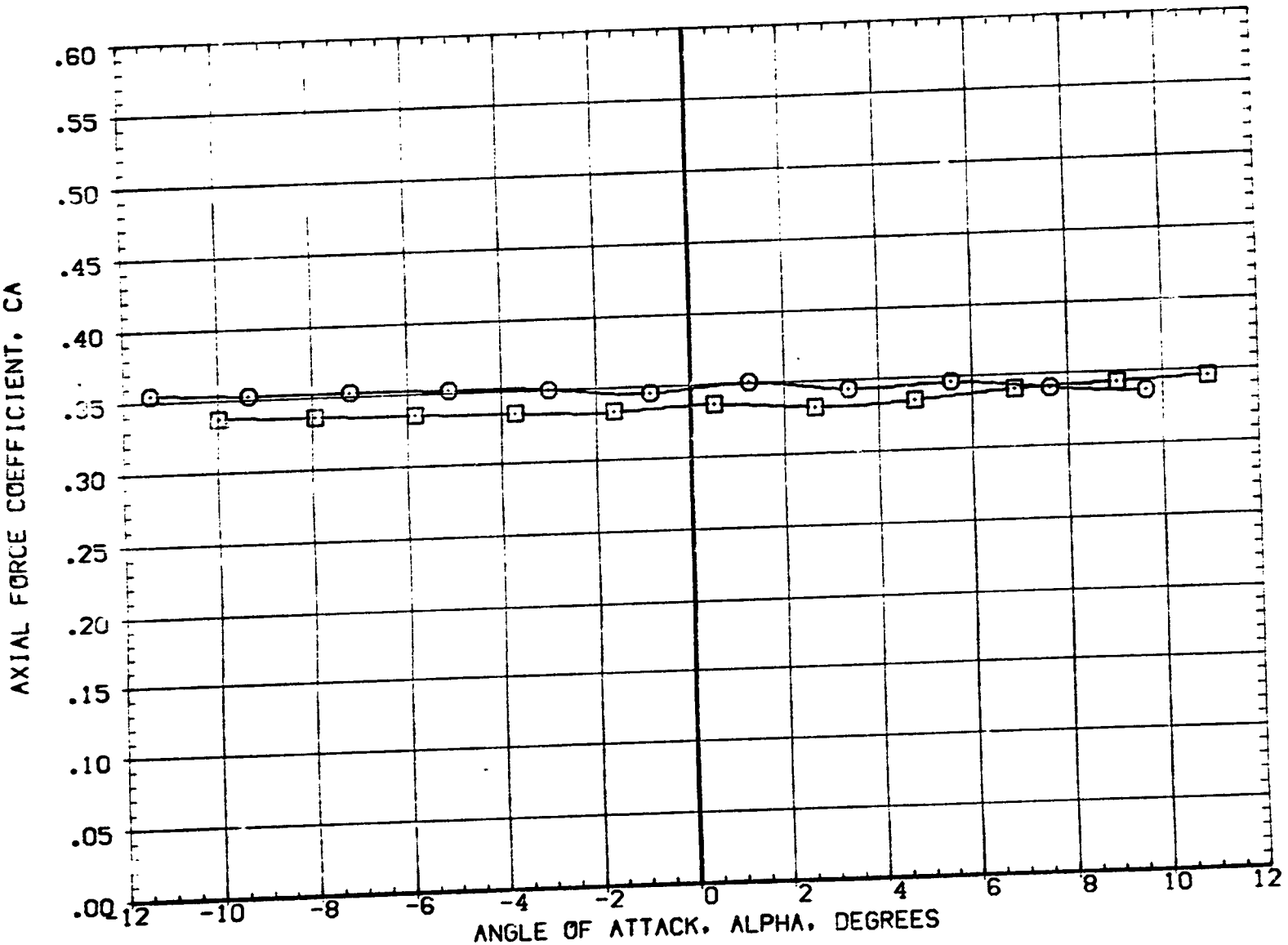
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573[[A3IFC] [03][T9][S3]	.500	.140	
(B90200)	□	MSFC 573[[A3IFC] [03][T9][S3] ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

		SD. IN
SREF	6.1980	IN.
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



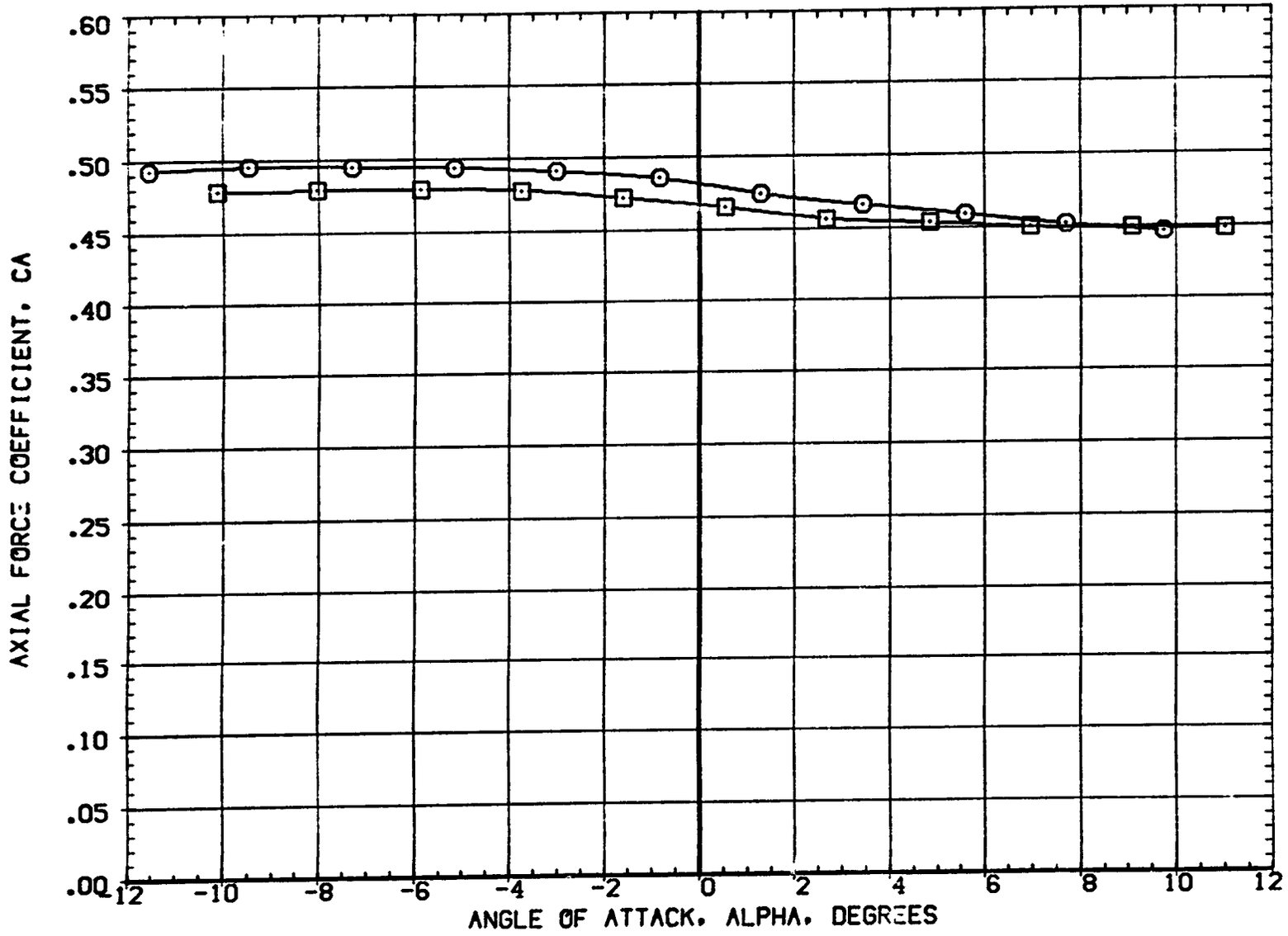
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



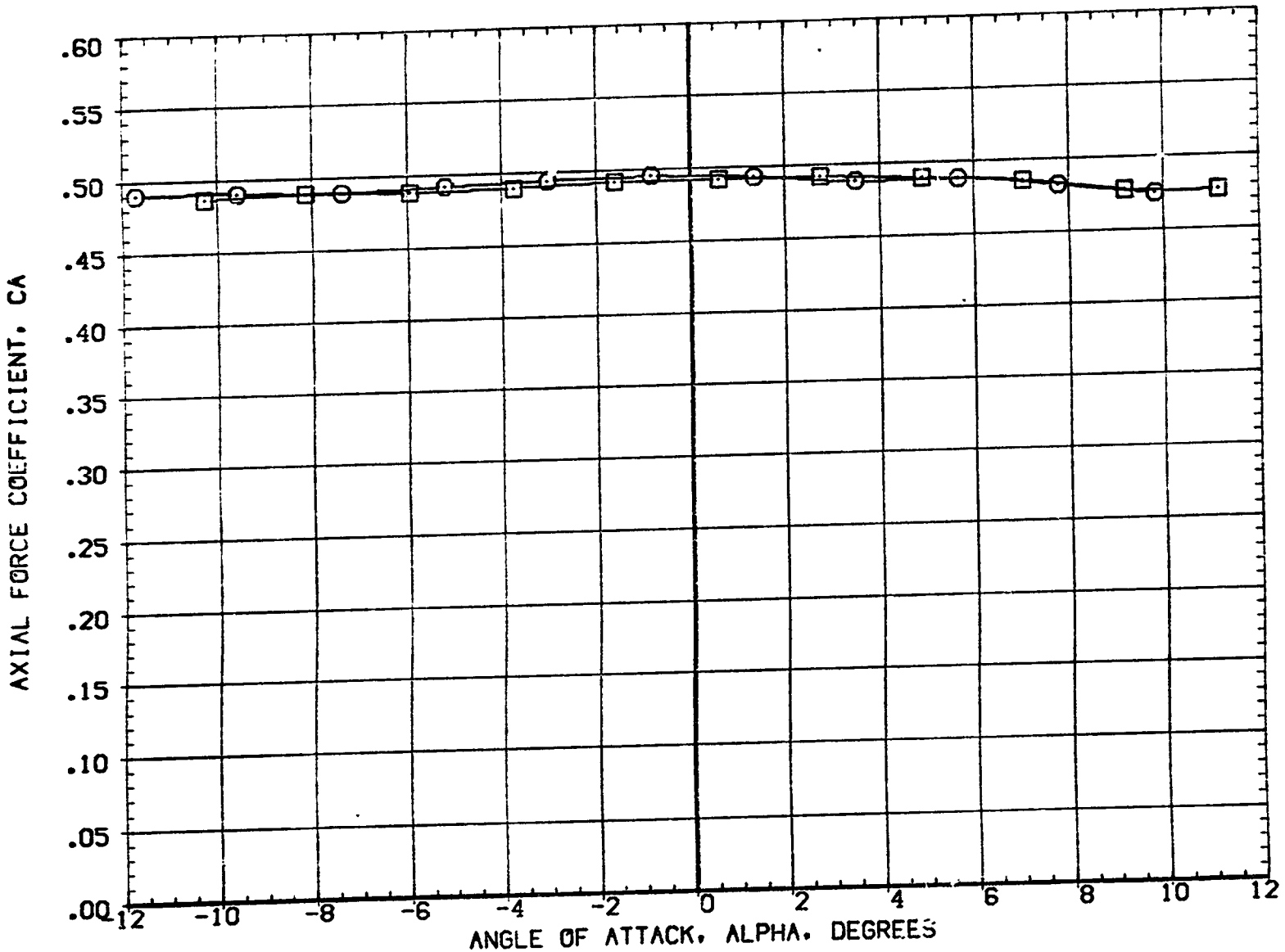
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



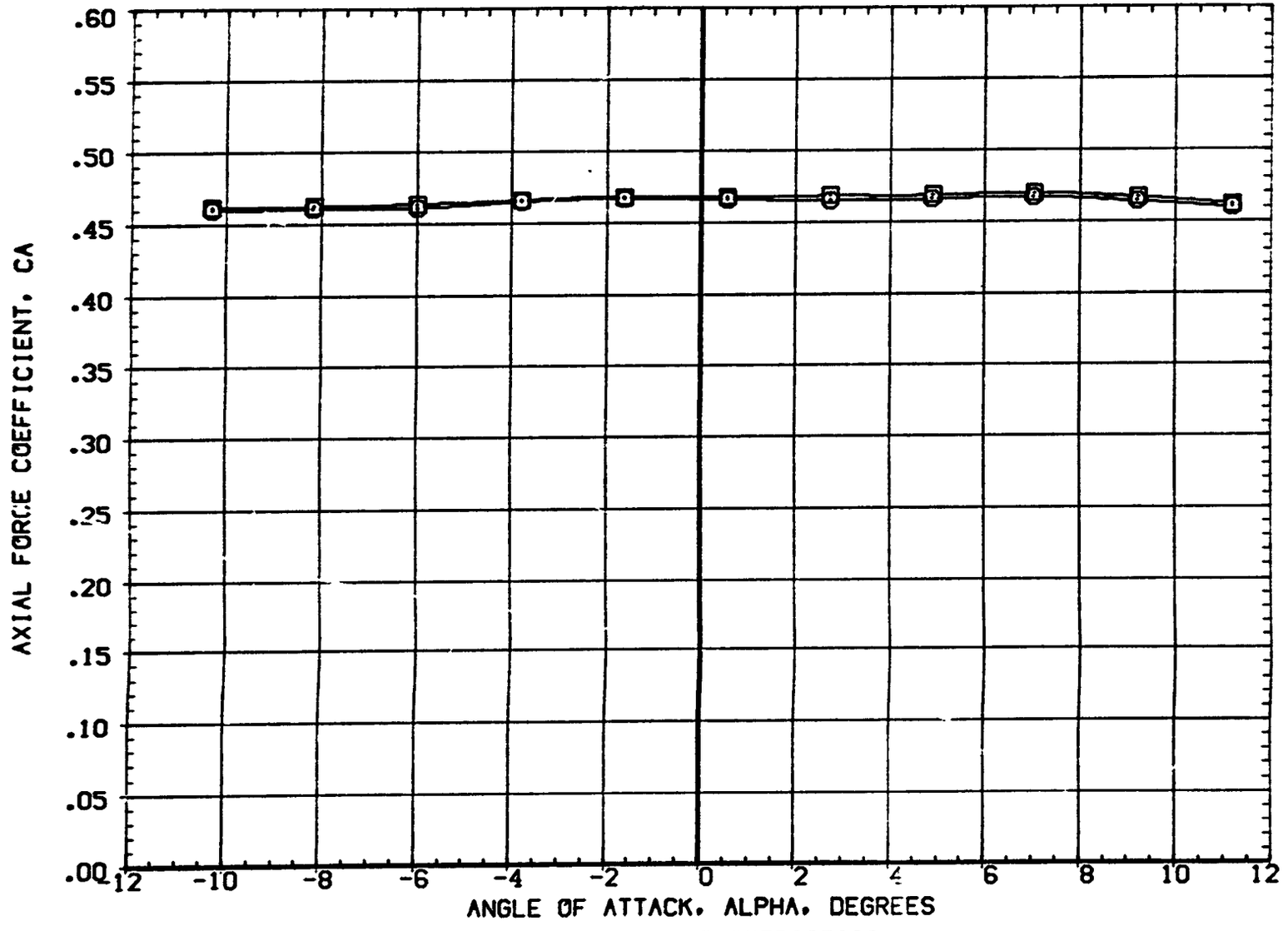
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



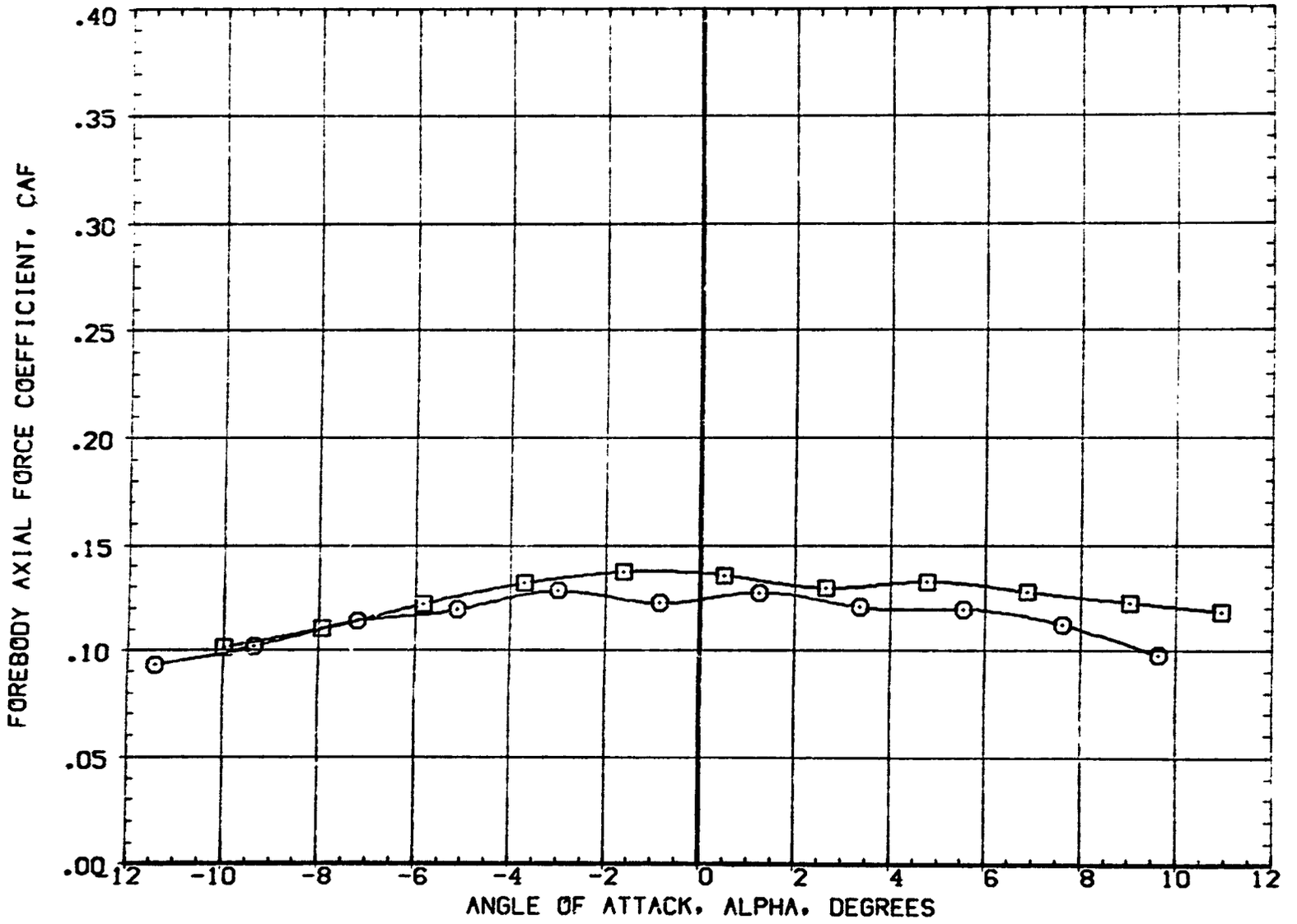
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



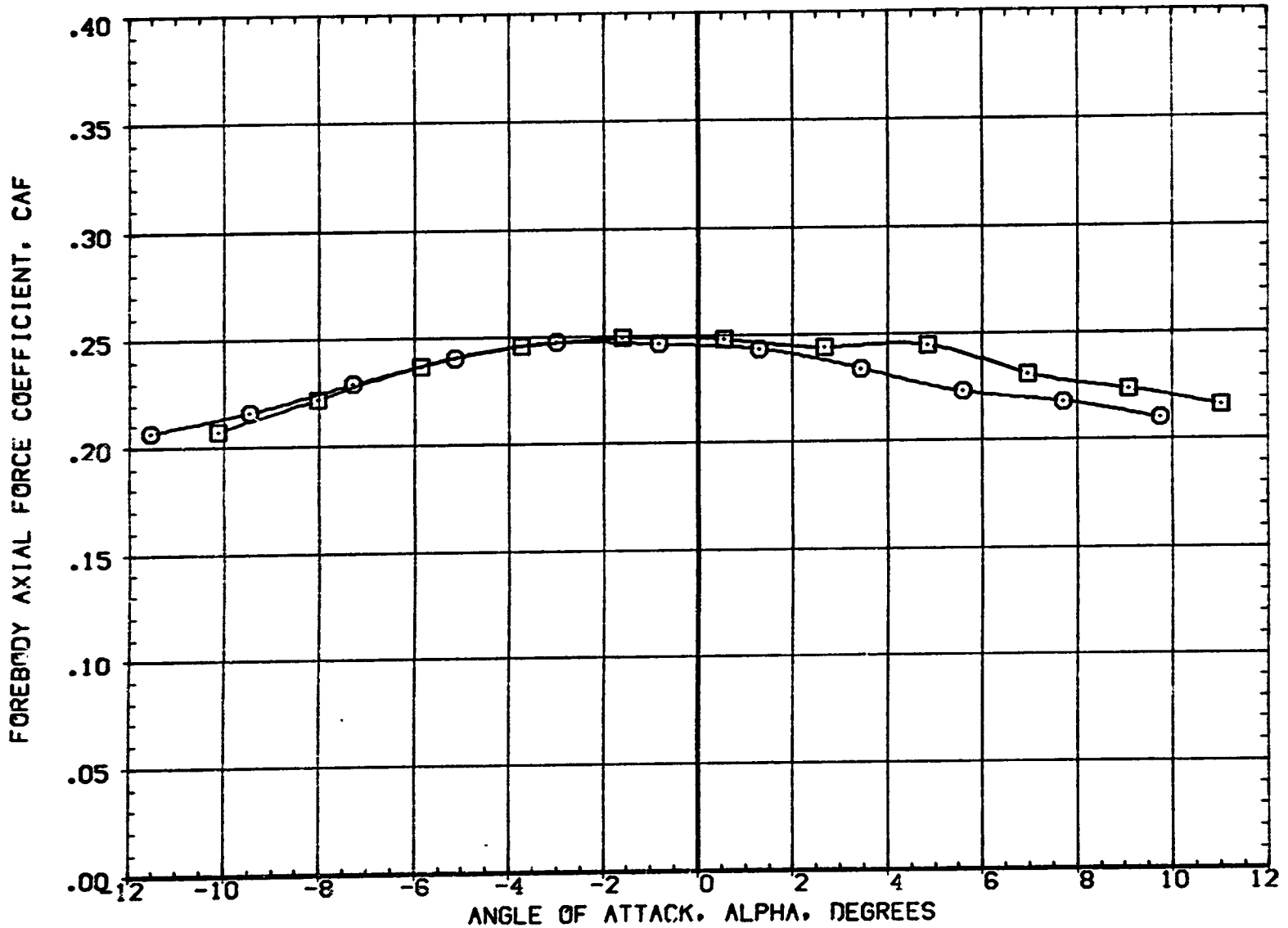
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	OR3INC	DELTAZ	ORBROL
(B90000)		MSFC 573(1A3FC) (03)(T9)(S3)	.500	.140	
(B90200)		MSFC 573(1A3FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. I.
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



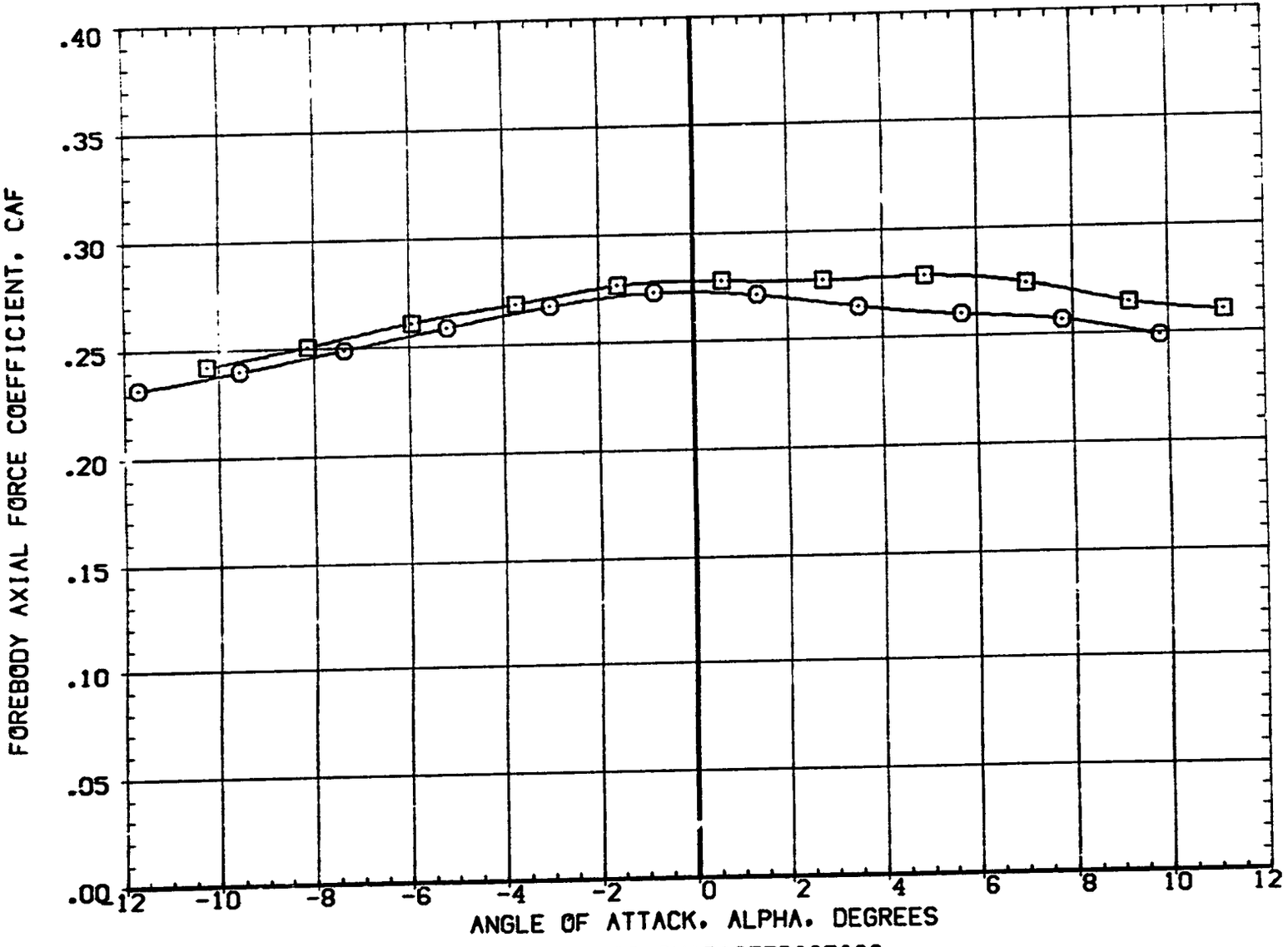
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



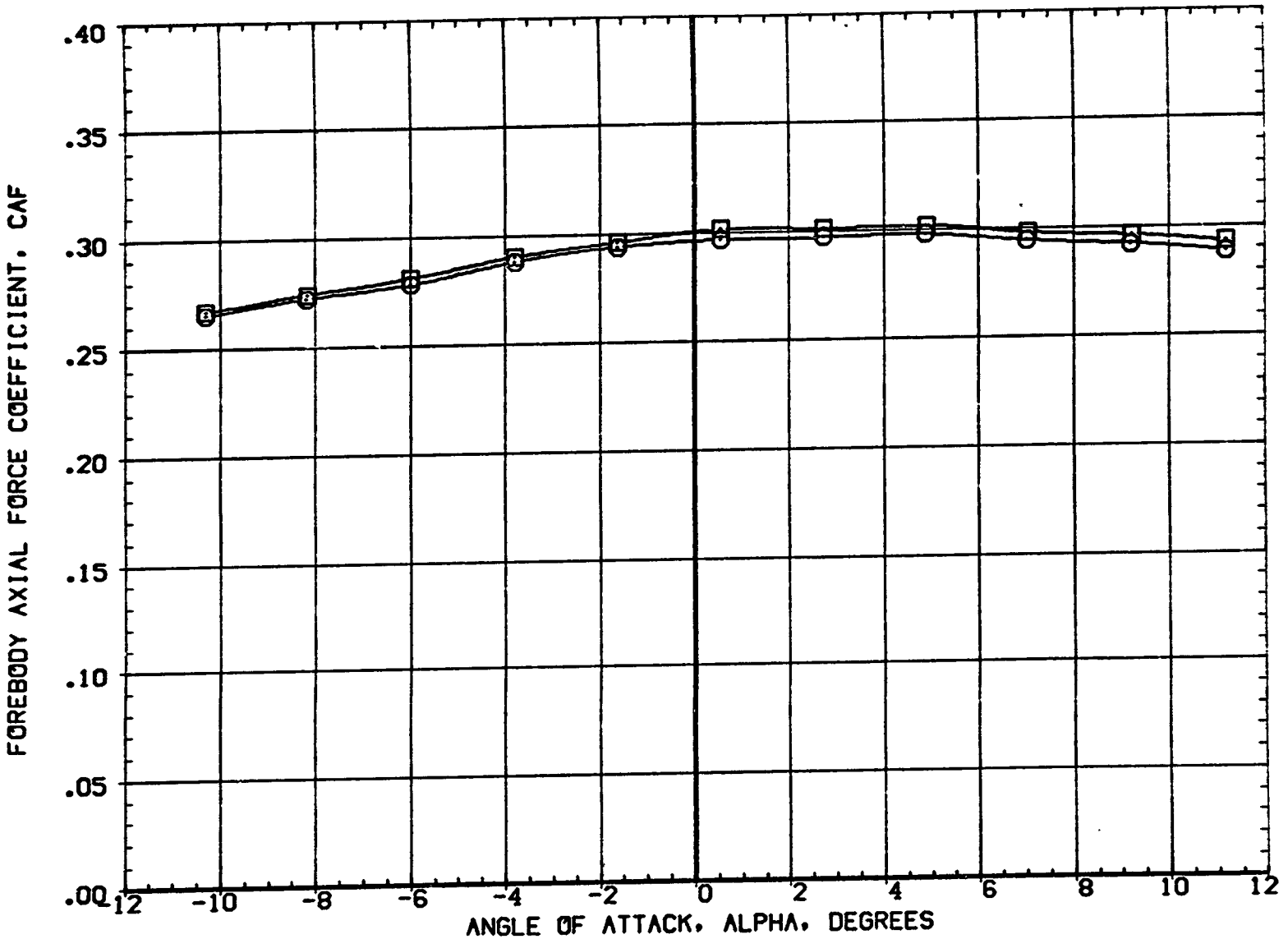
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)		MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)		MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

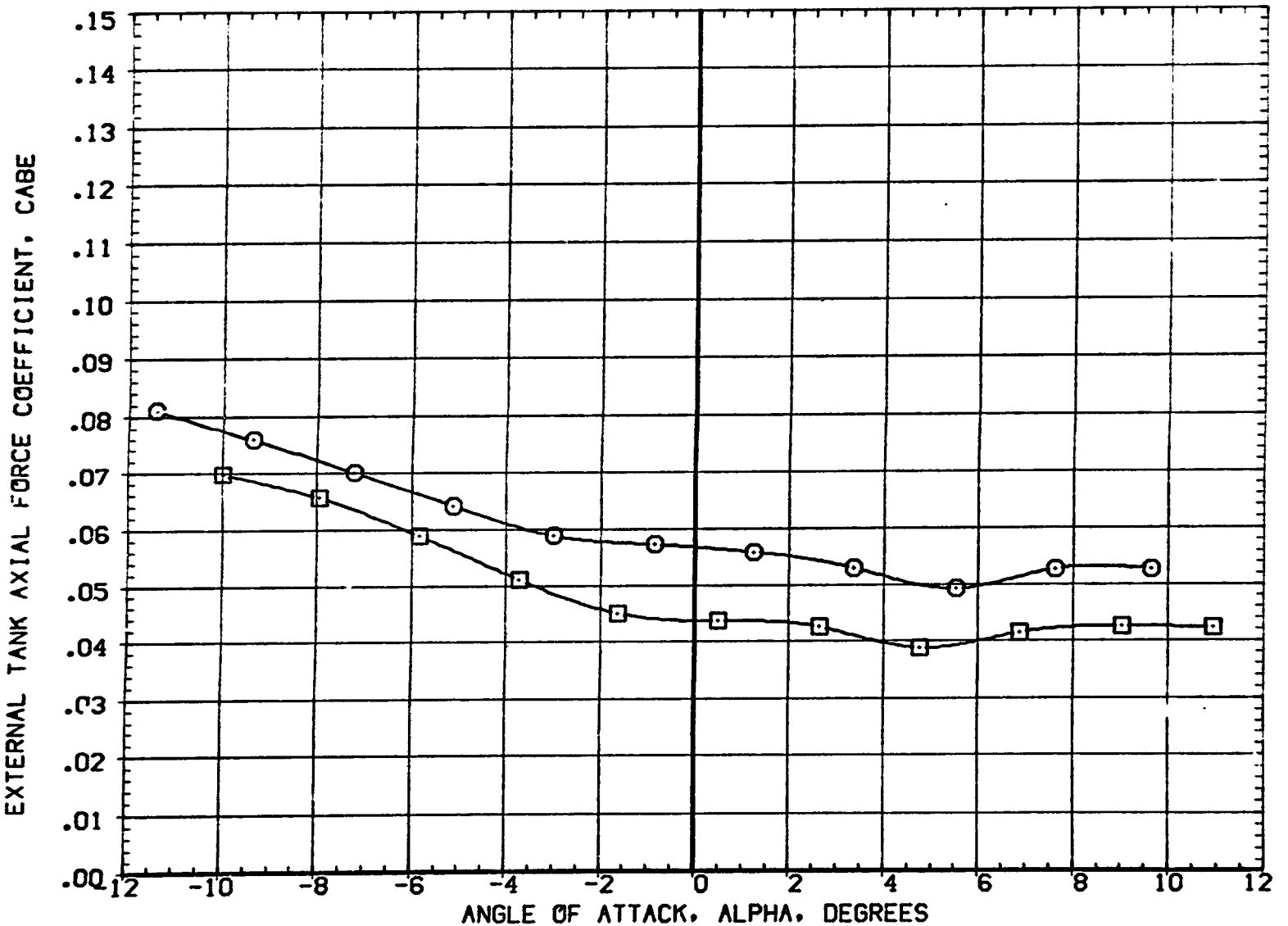


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



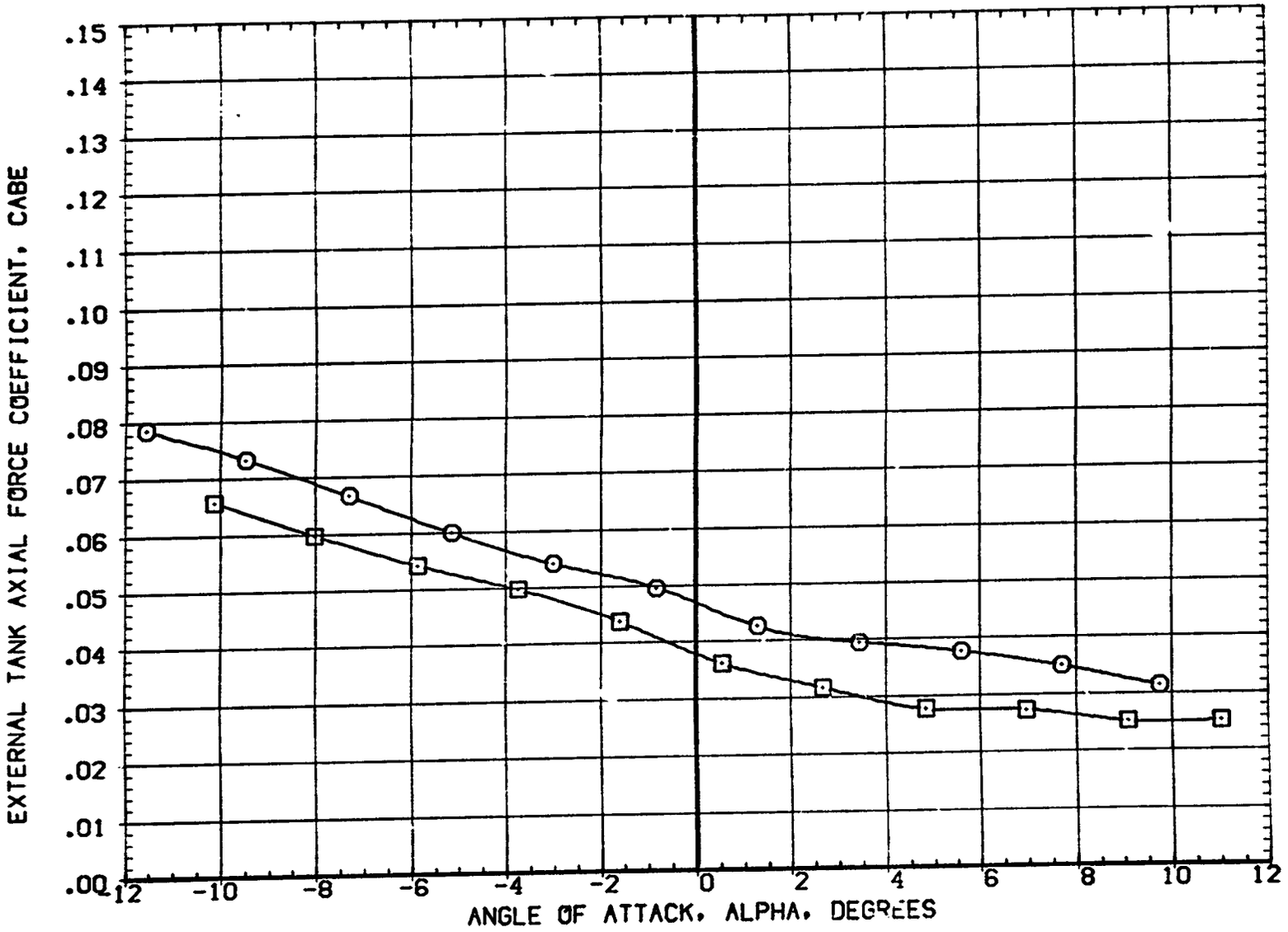
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



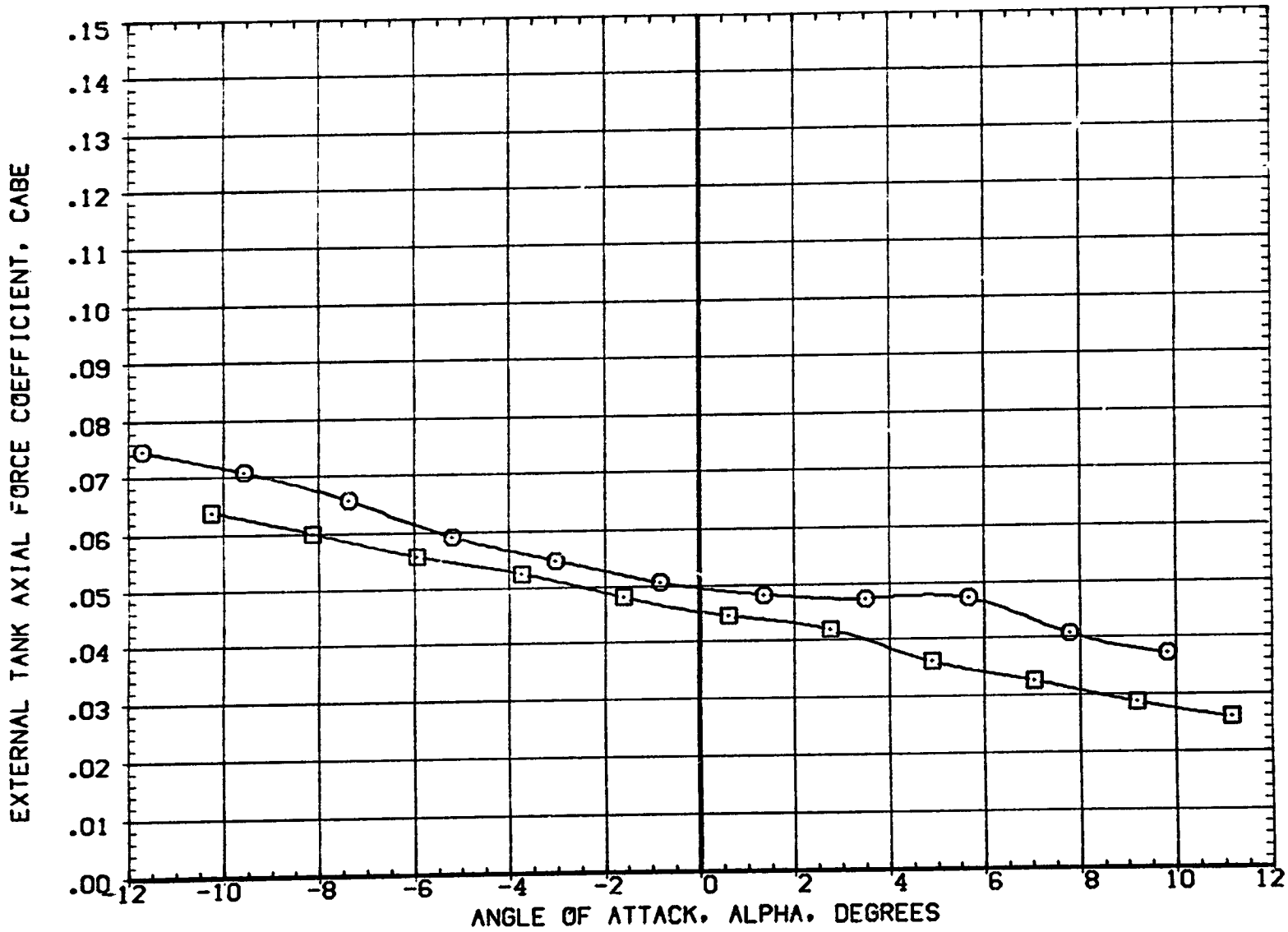
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000) ○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90200) □	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

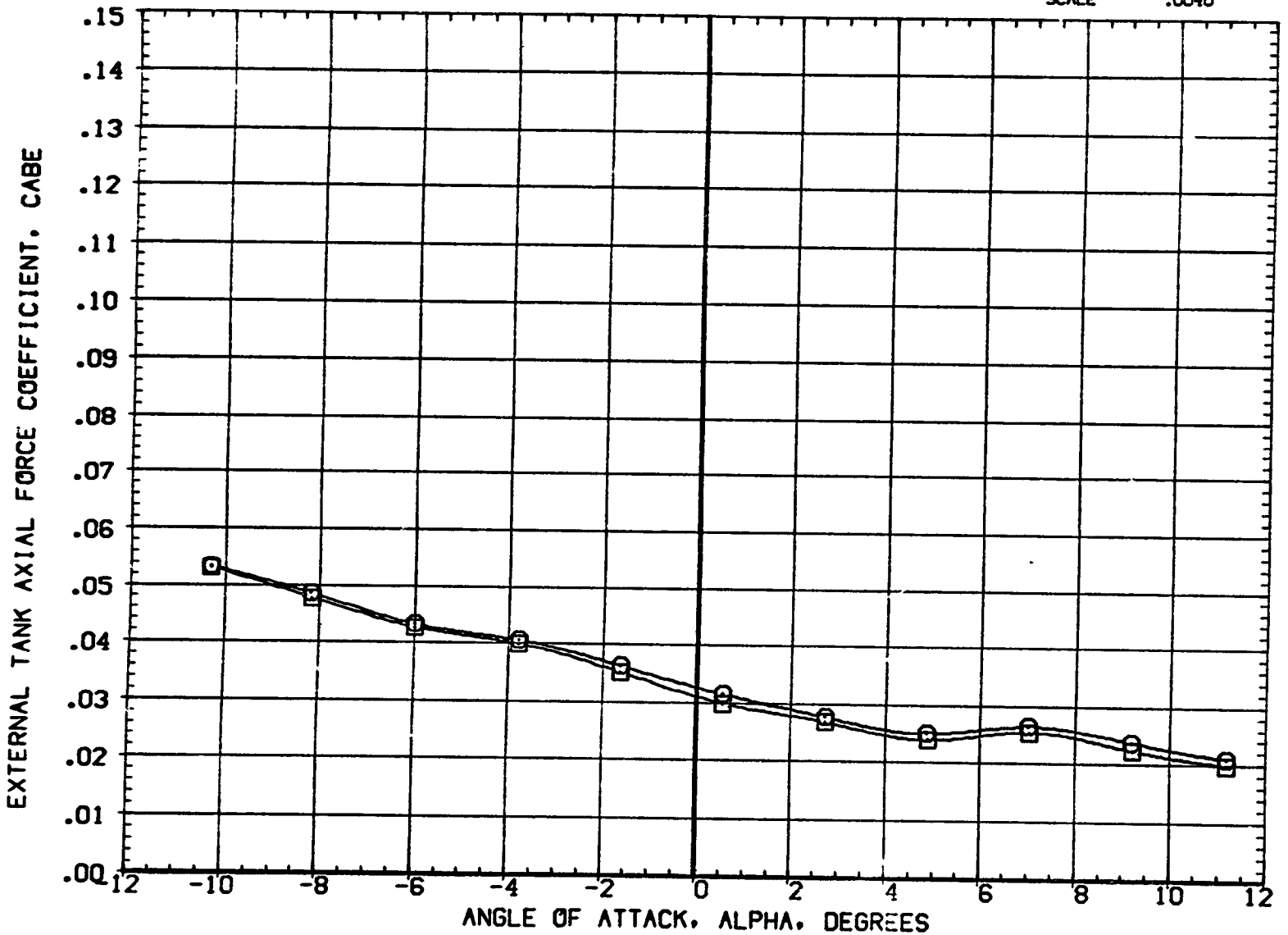


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



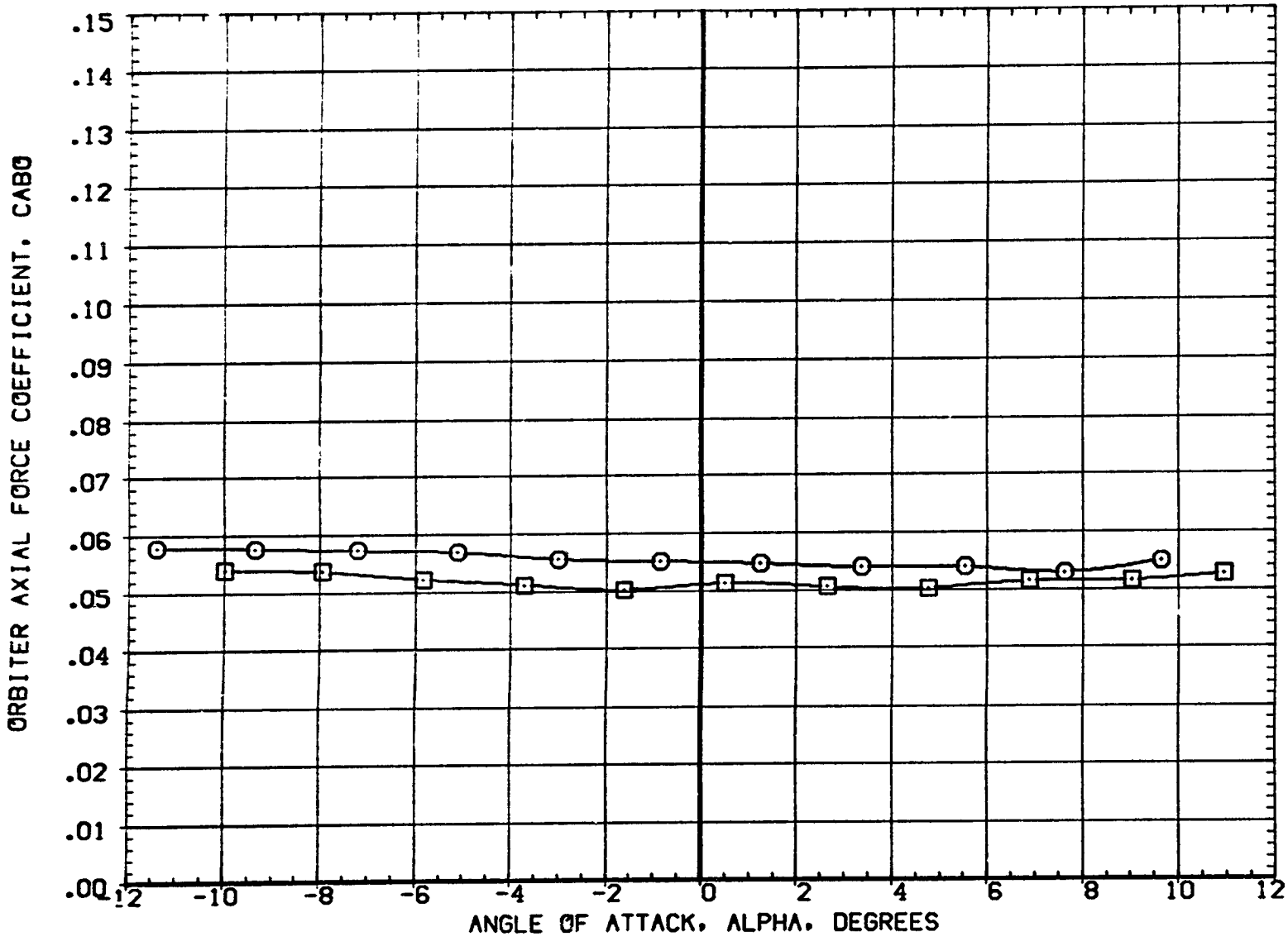
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



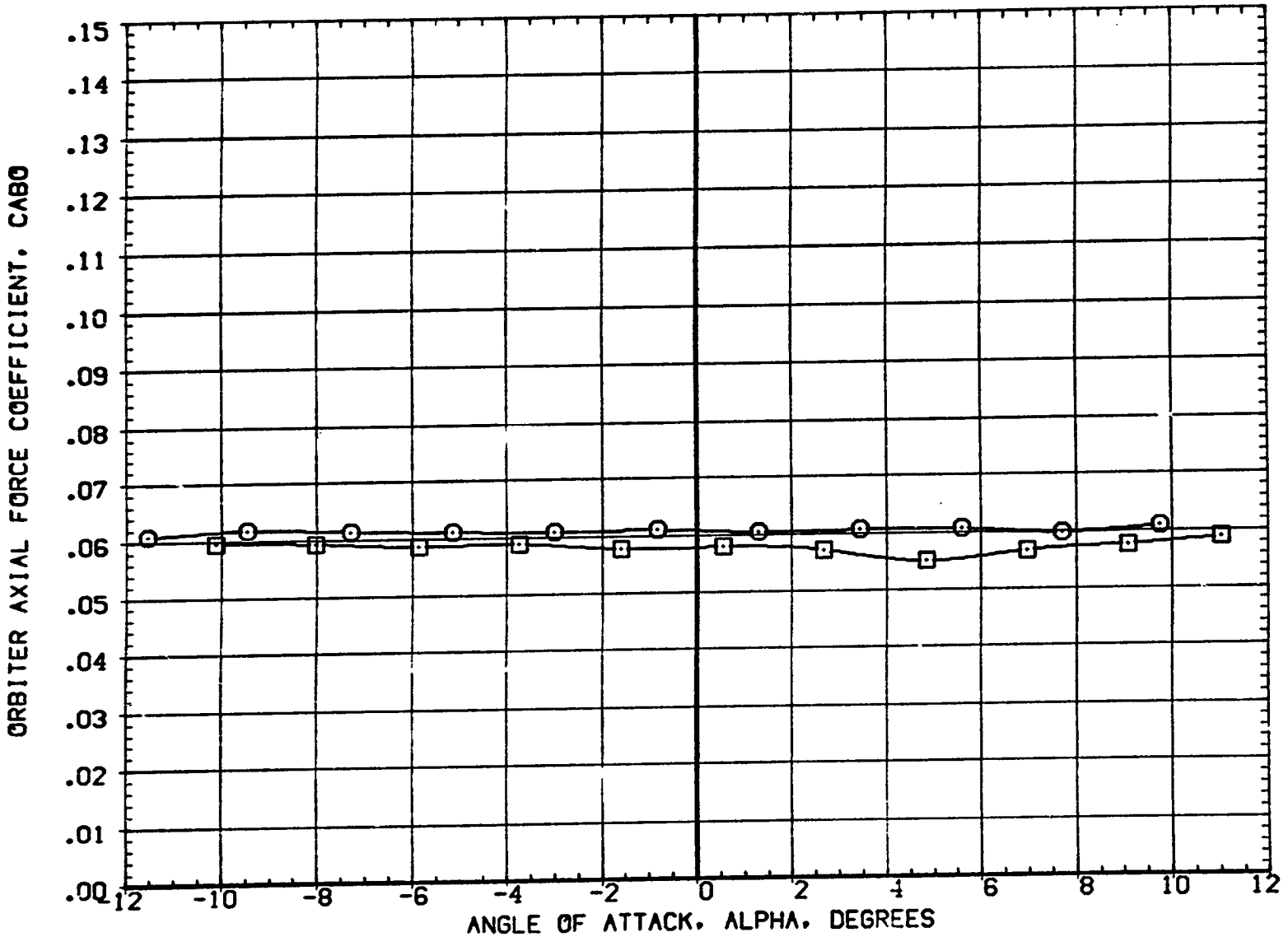
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

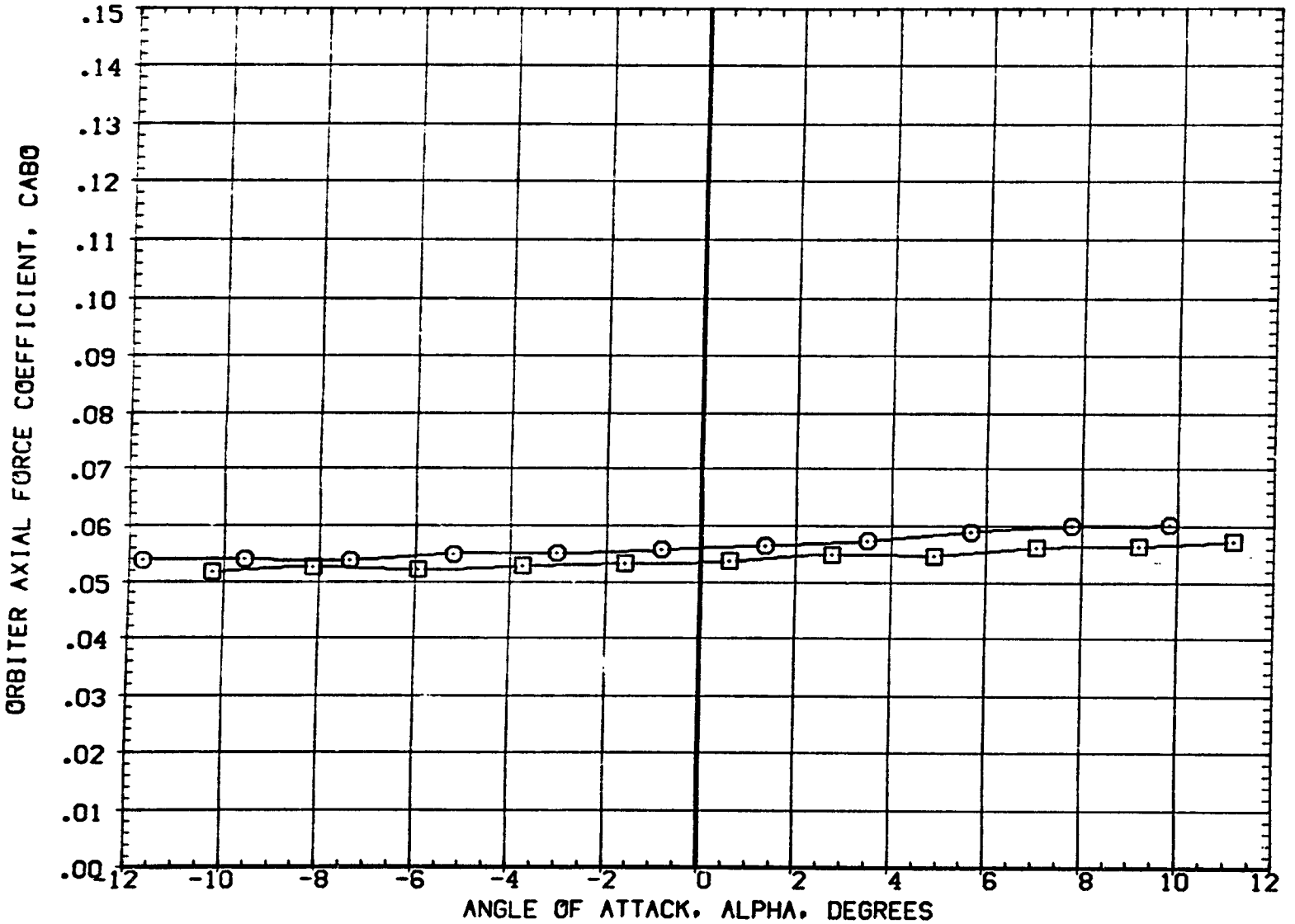


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



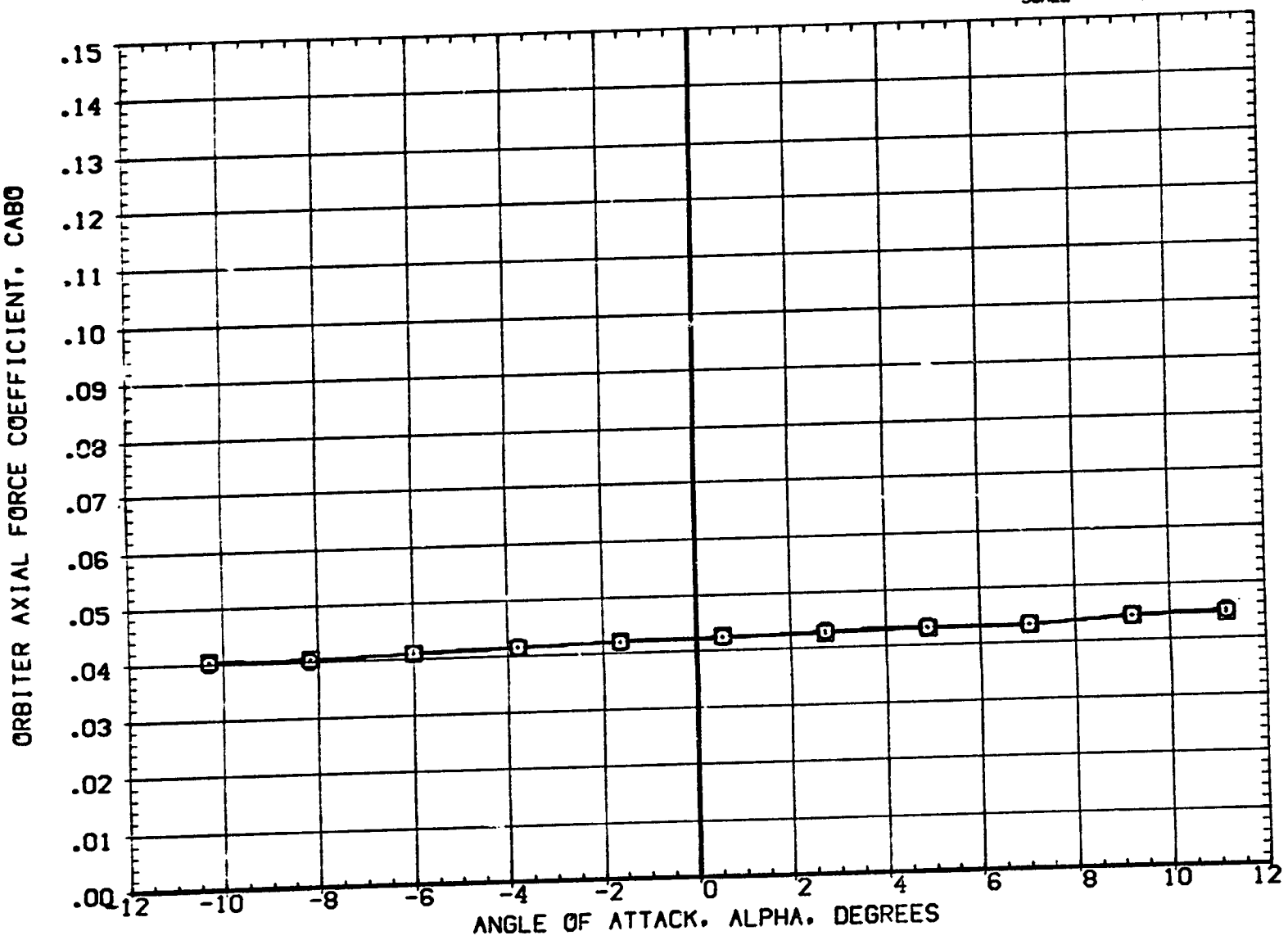
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



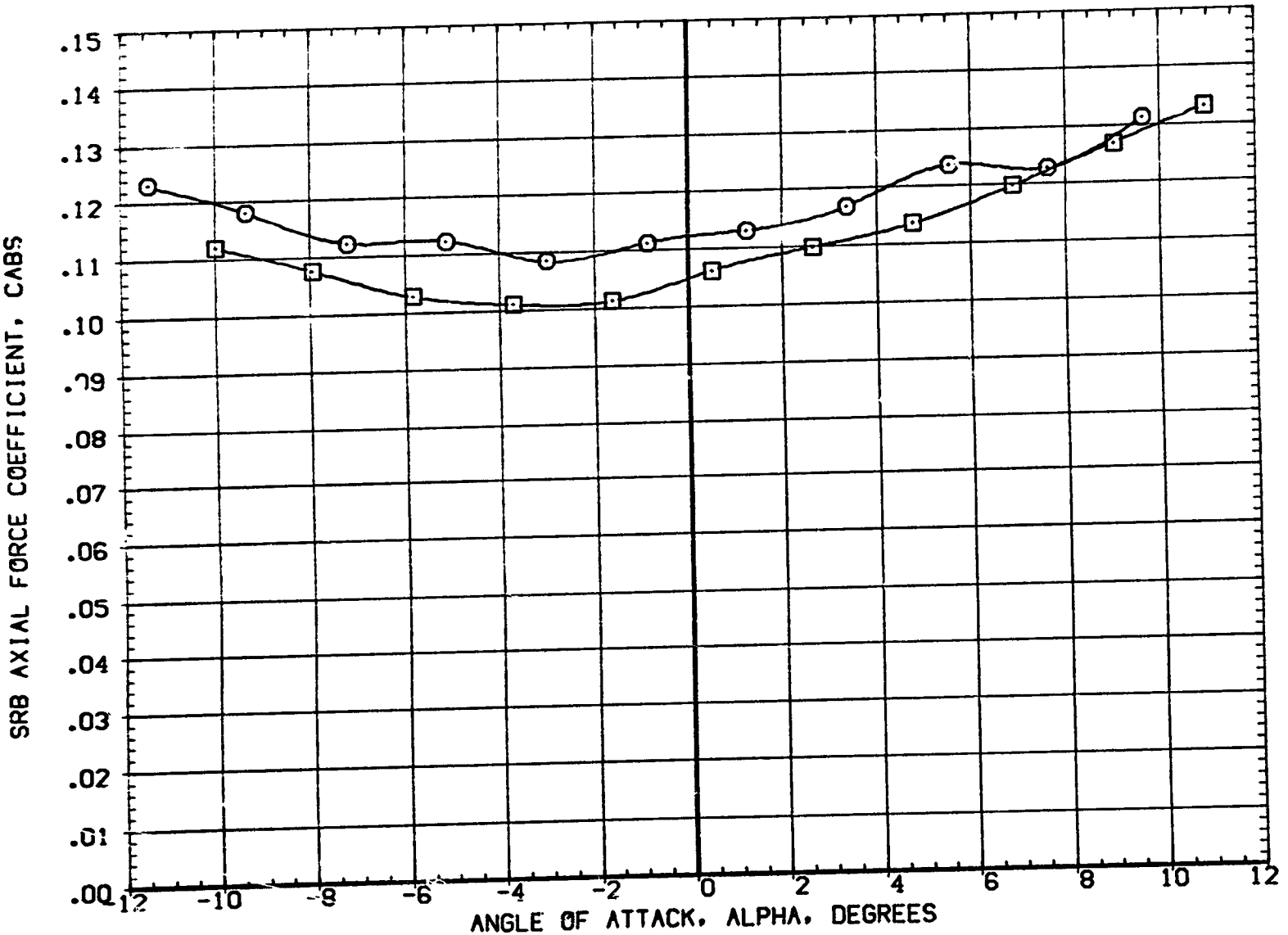
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROT.
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



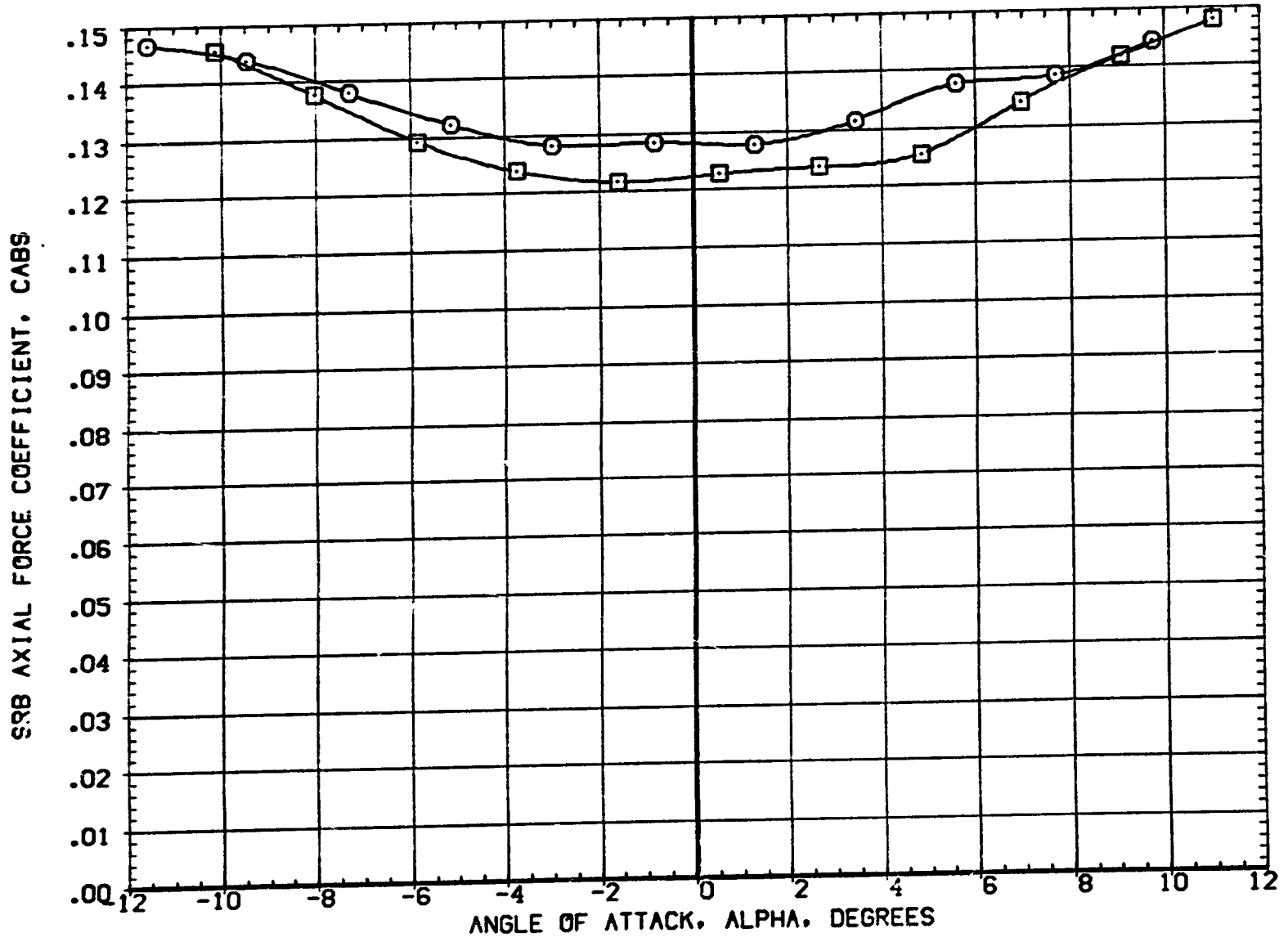
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

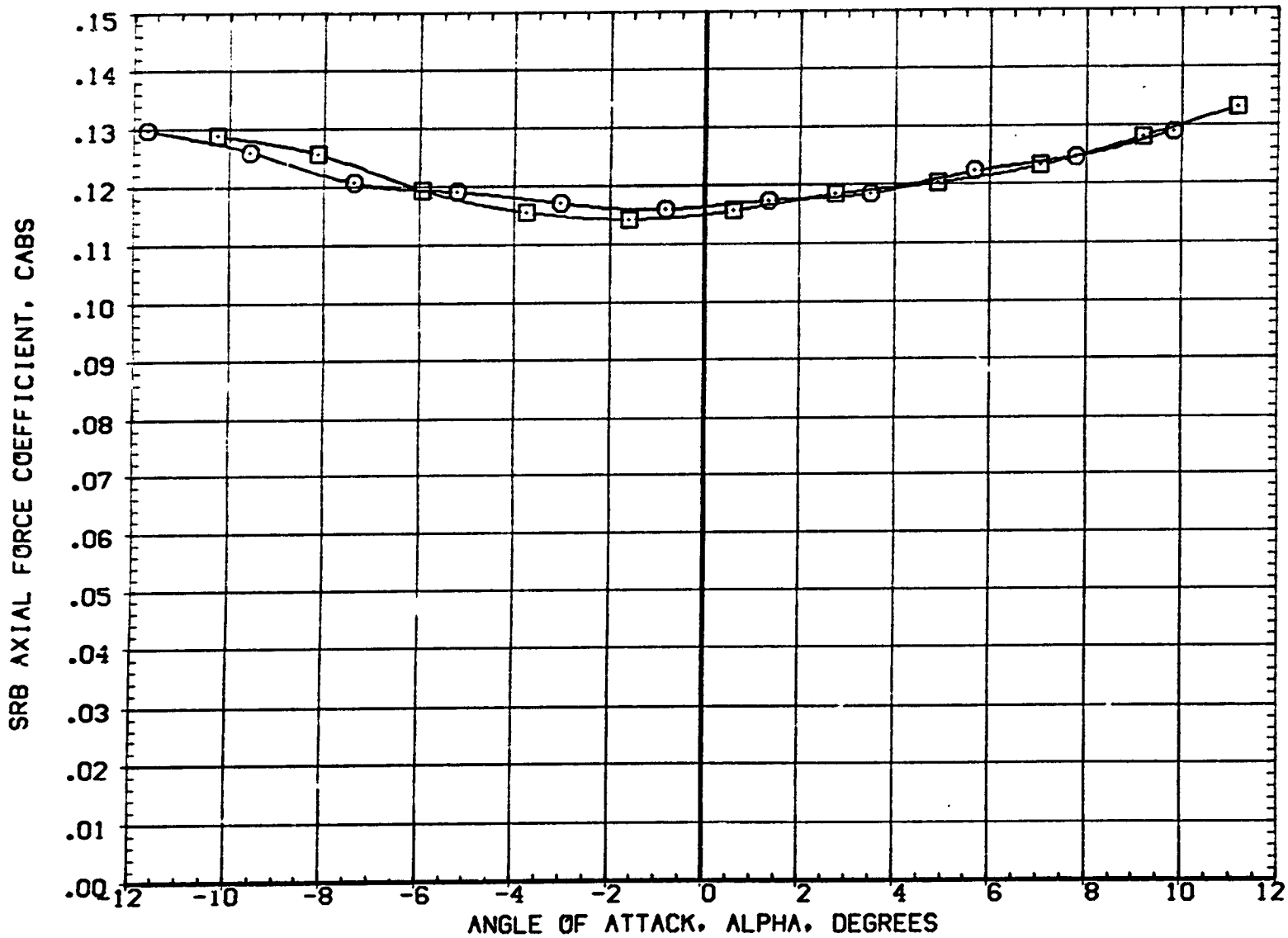


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000) ○	MSFC S73(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200) □	MSFC S73(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



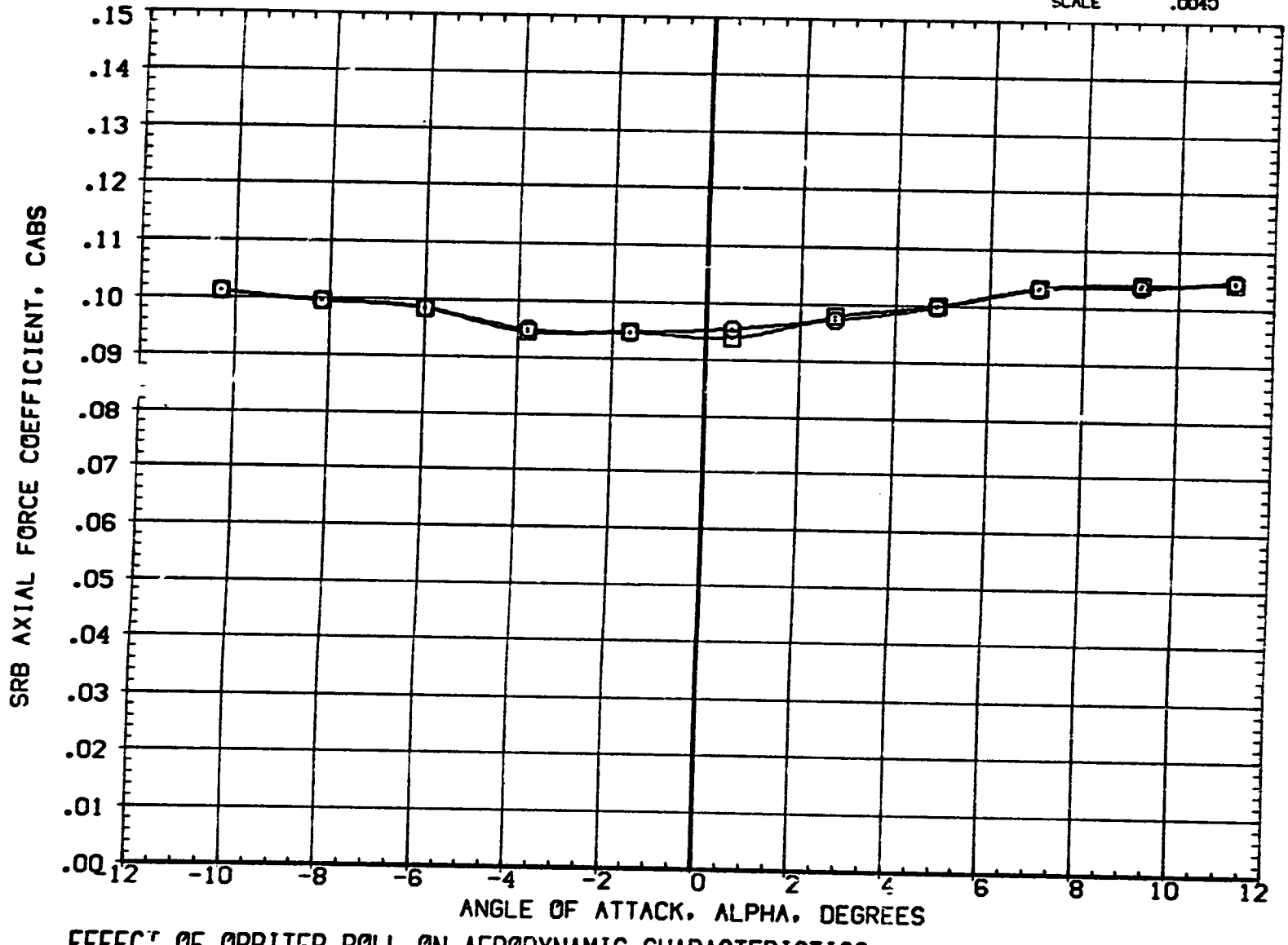
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

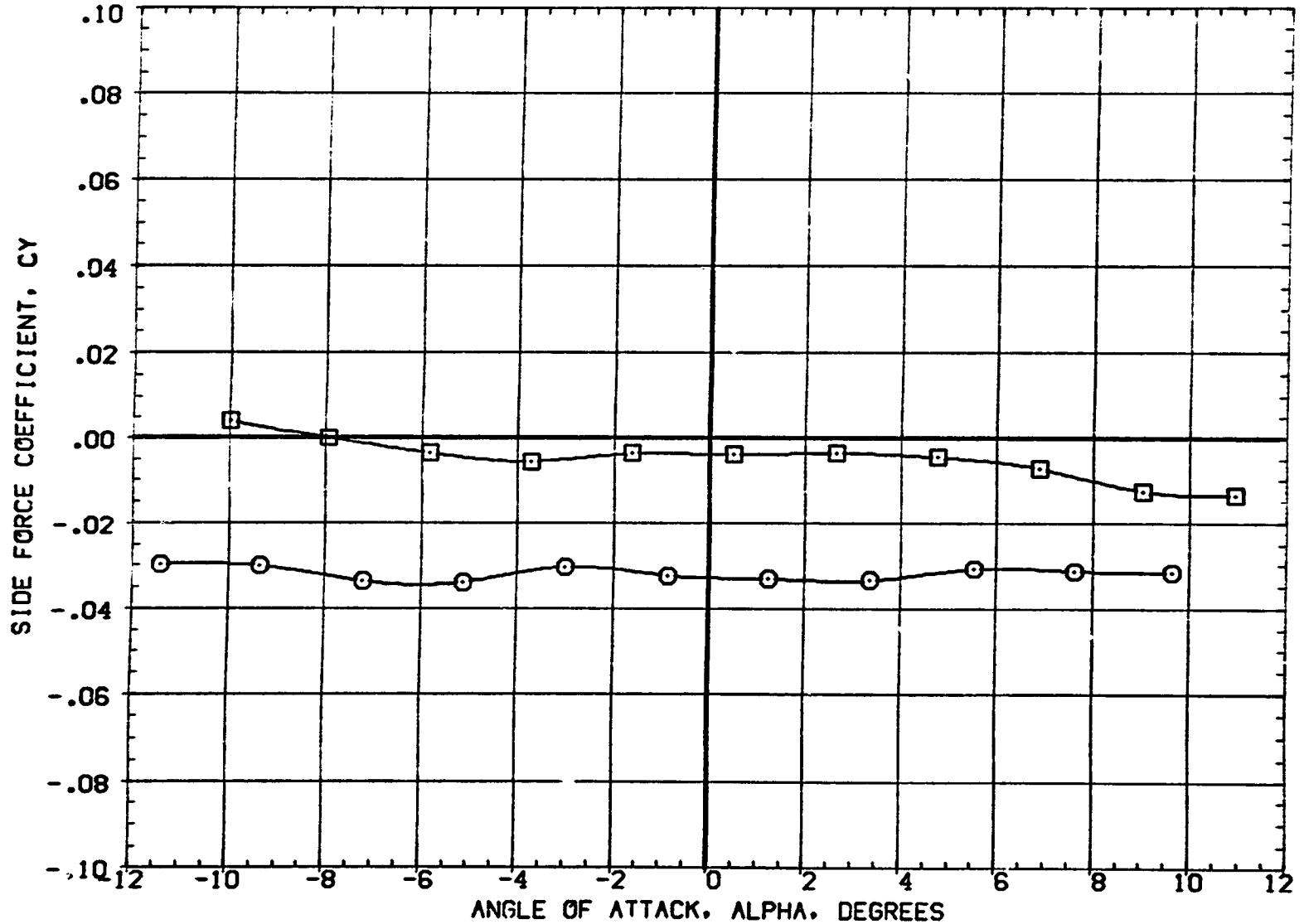


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

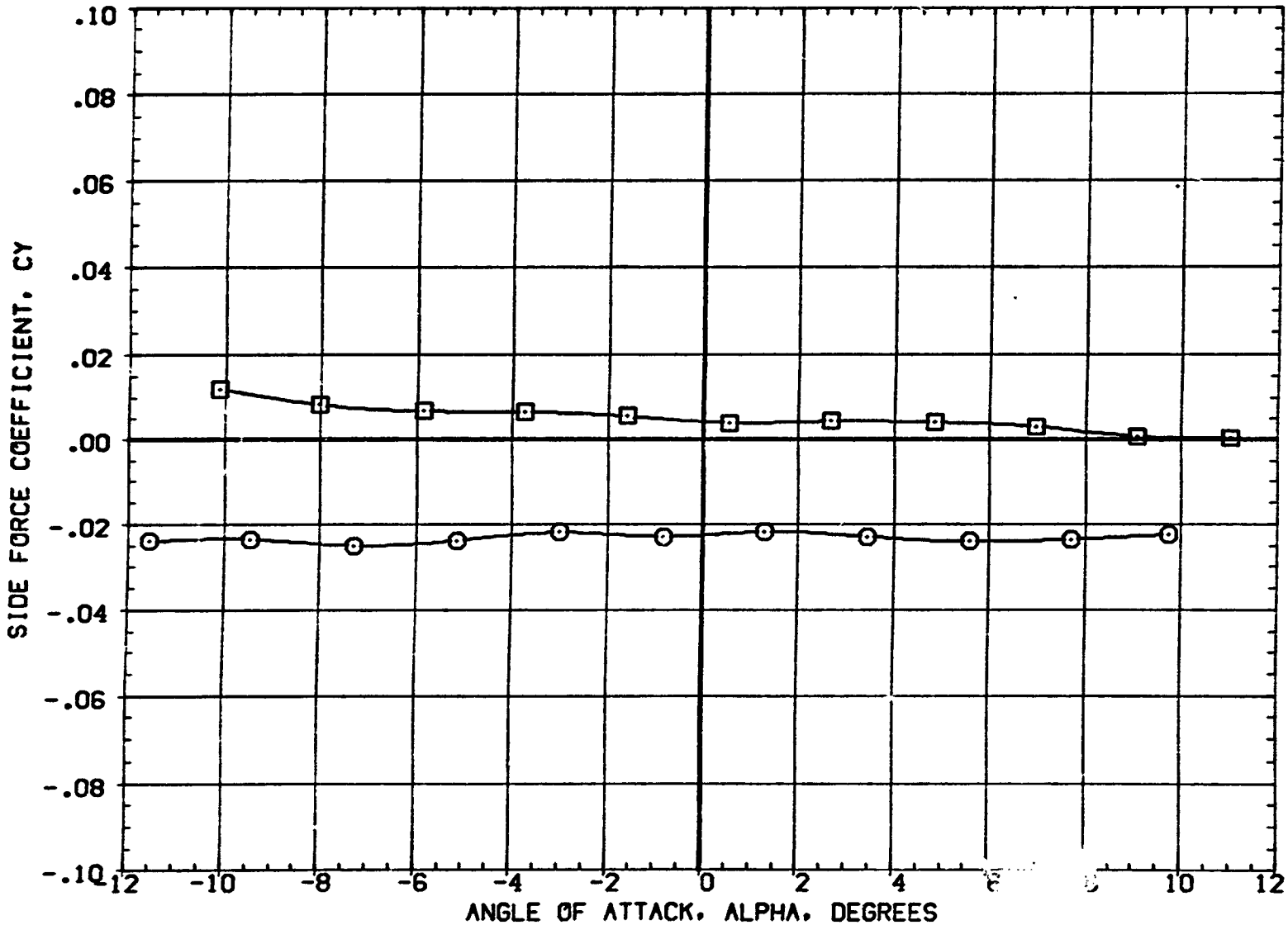


EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



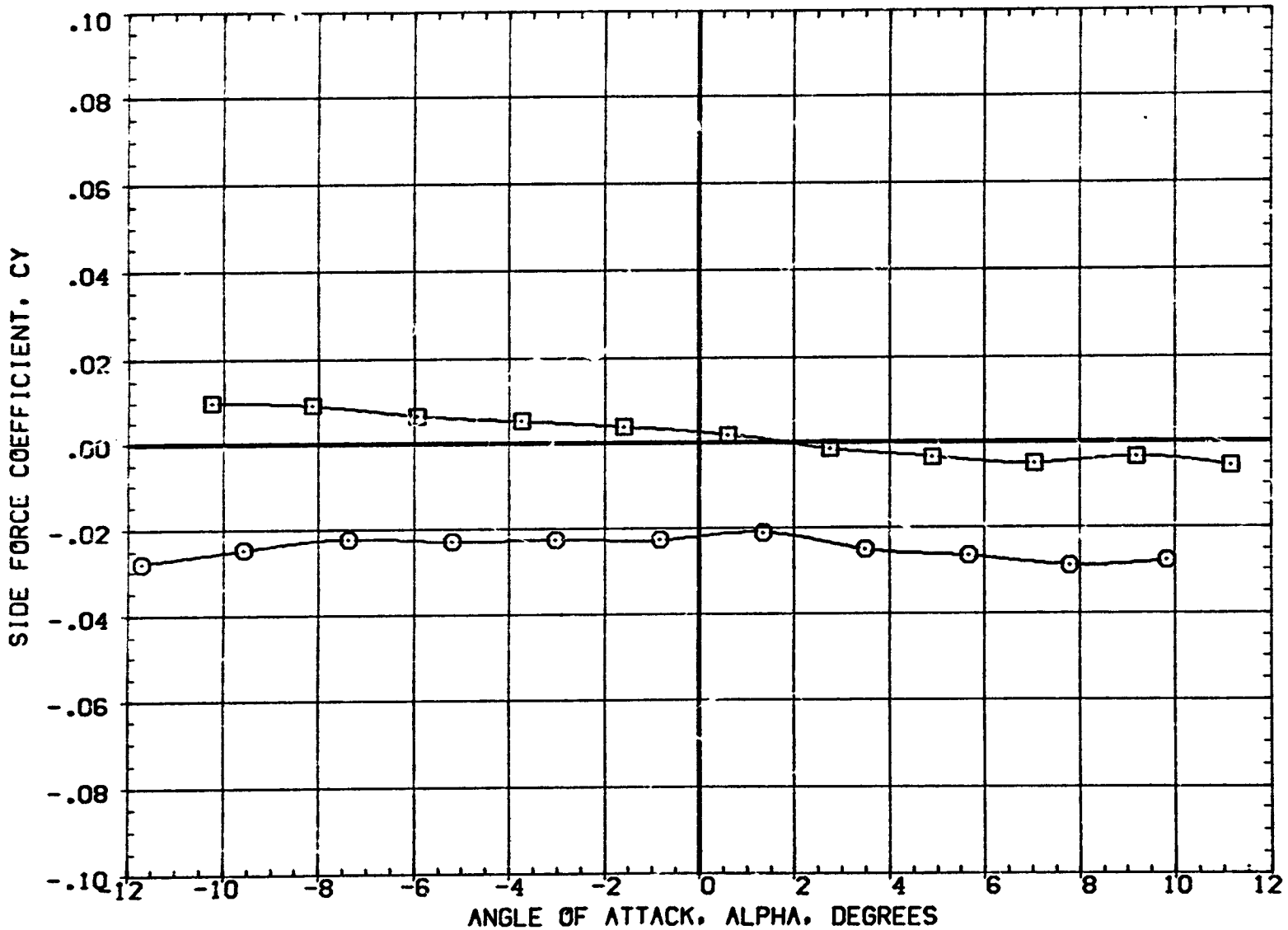
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



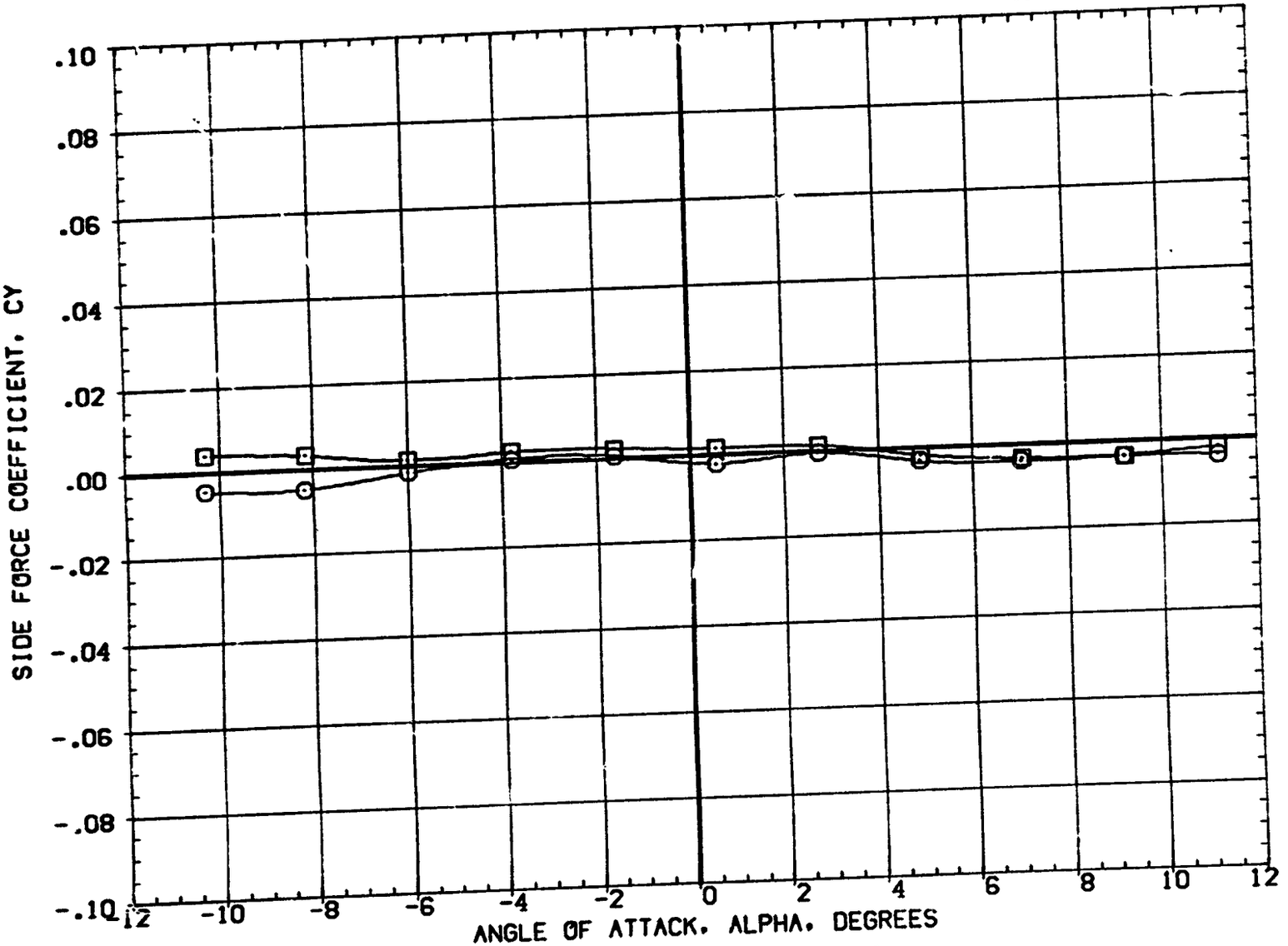
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALND.	.50	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



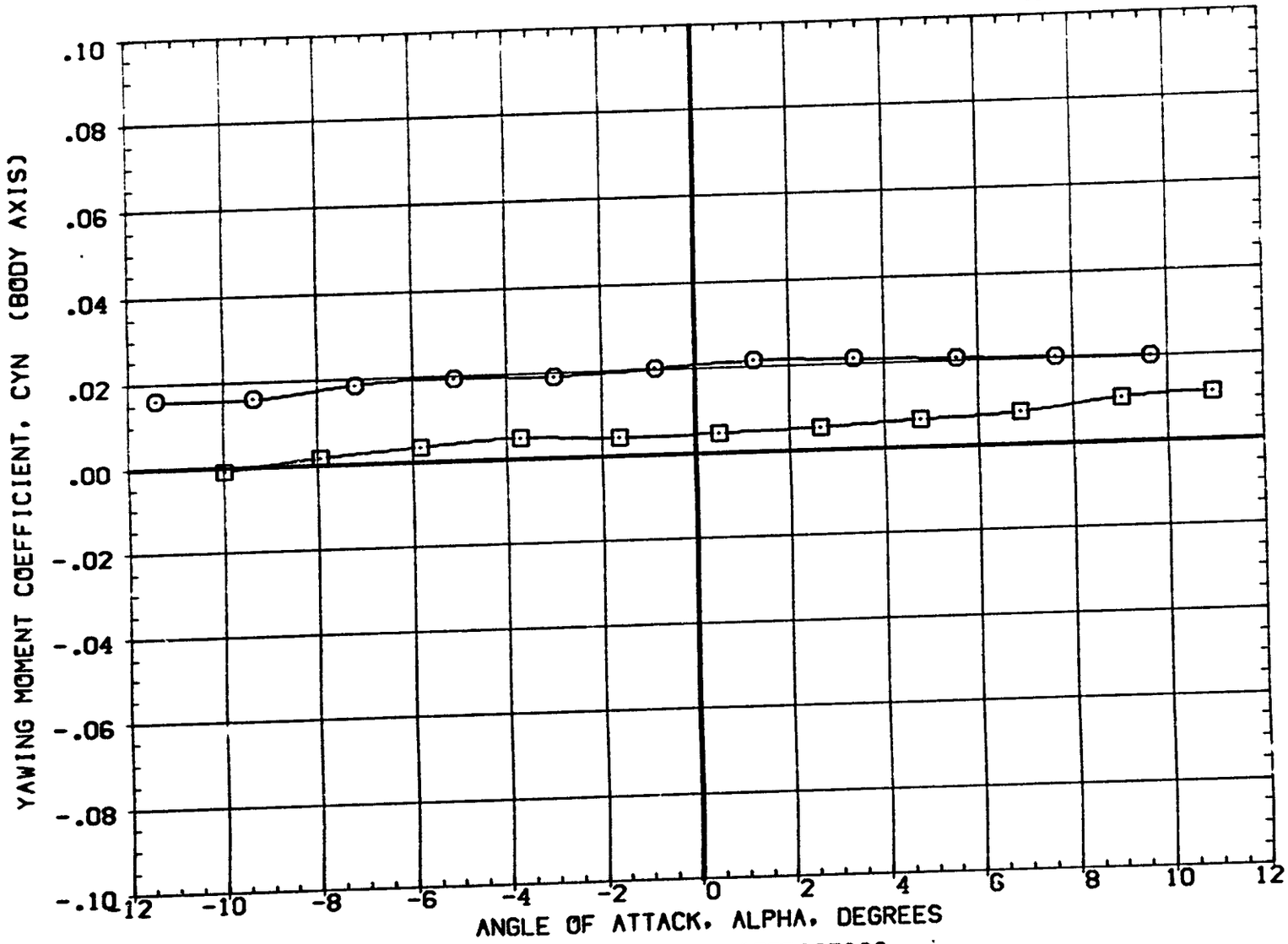
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B902C0)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



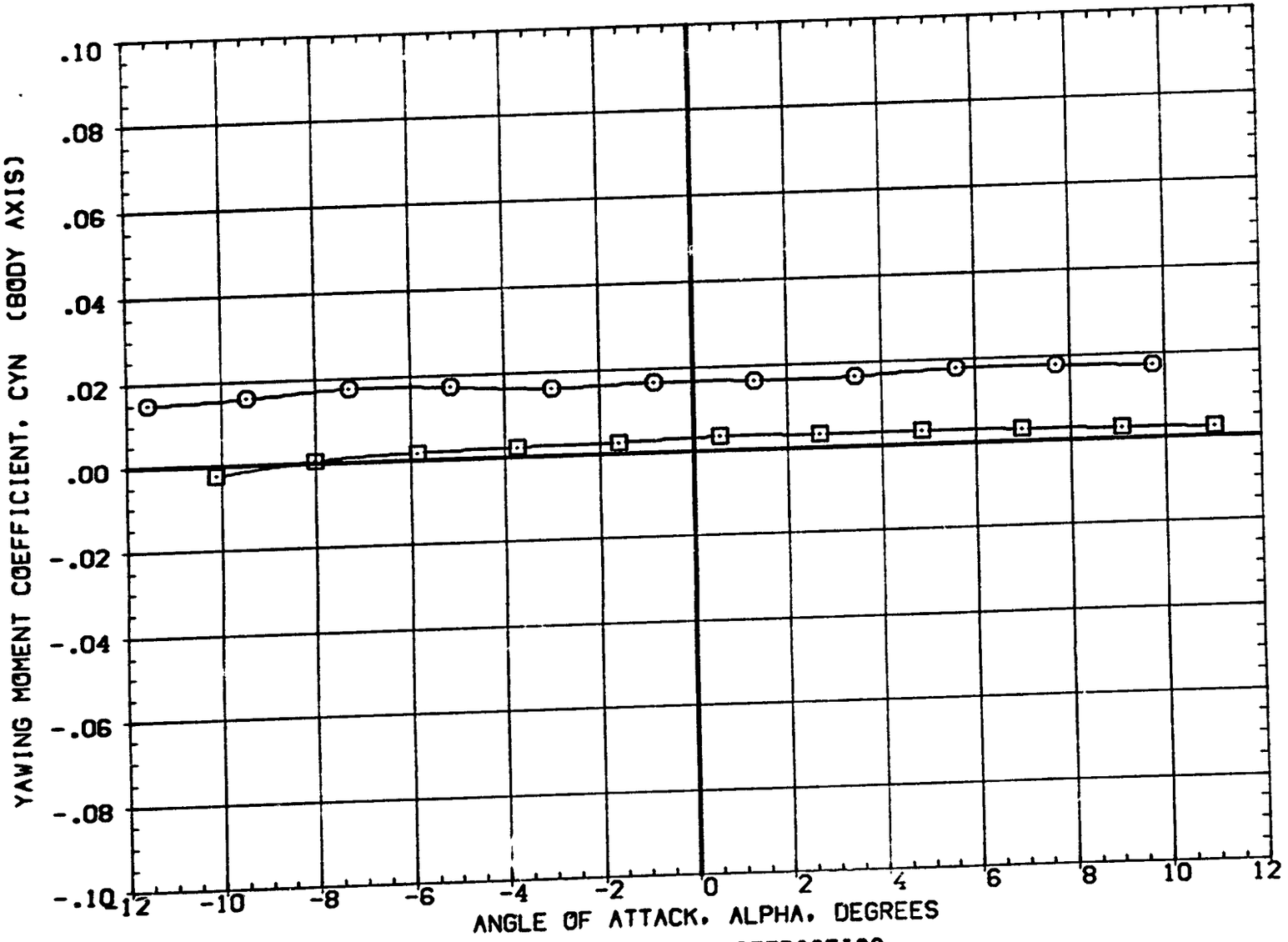
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	8	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200)	8	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



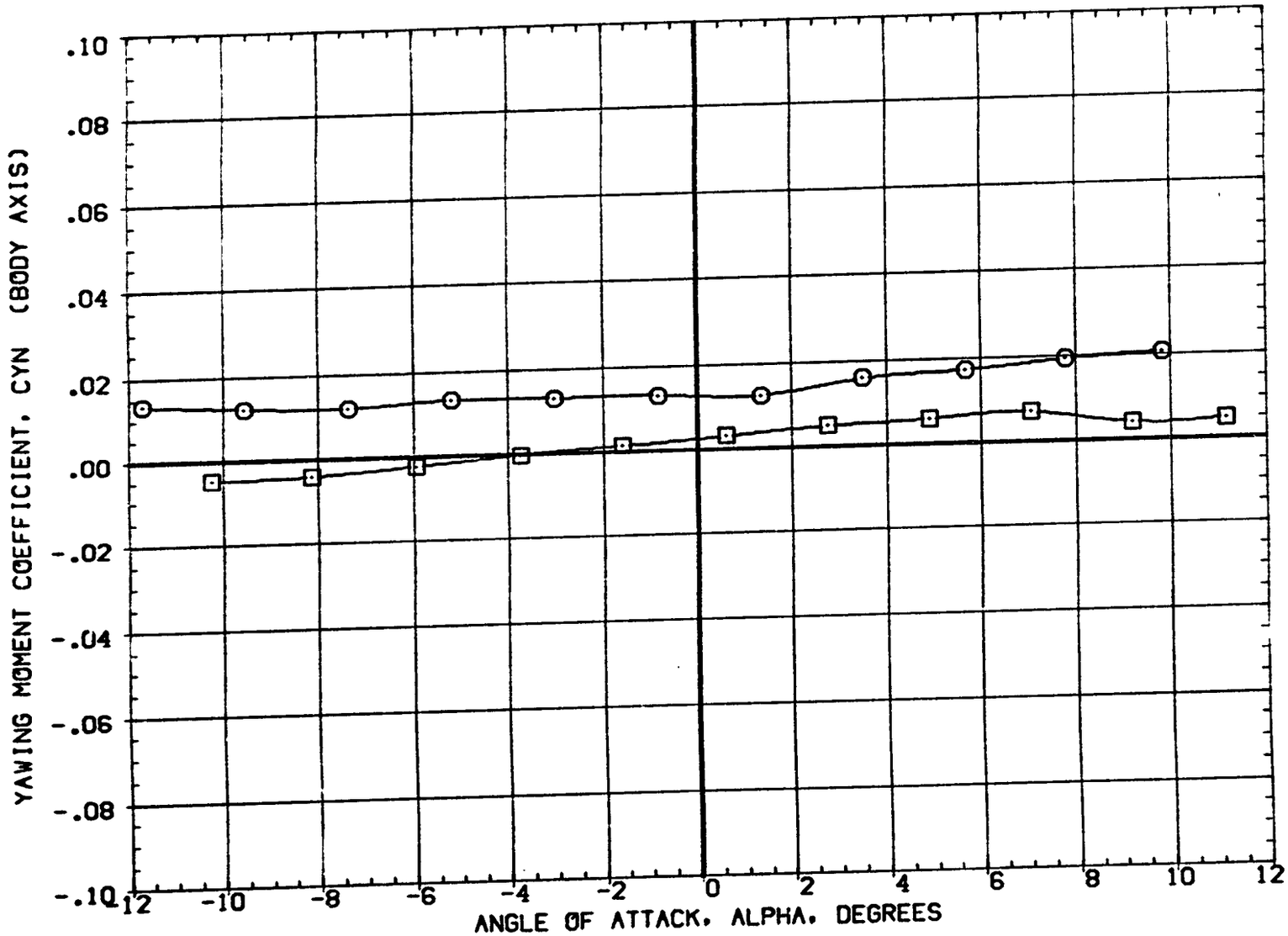
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000) ○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90200) □	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



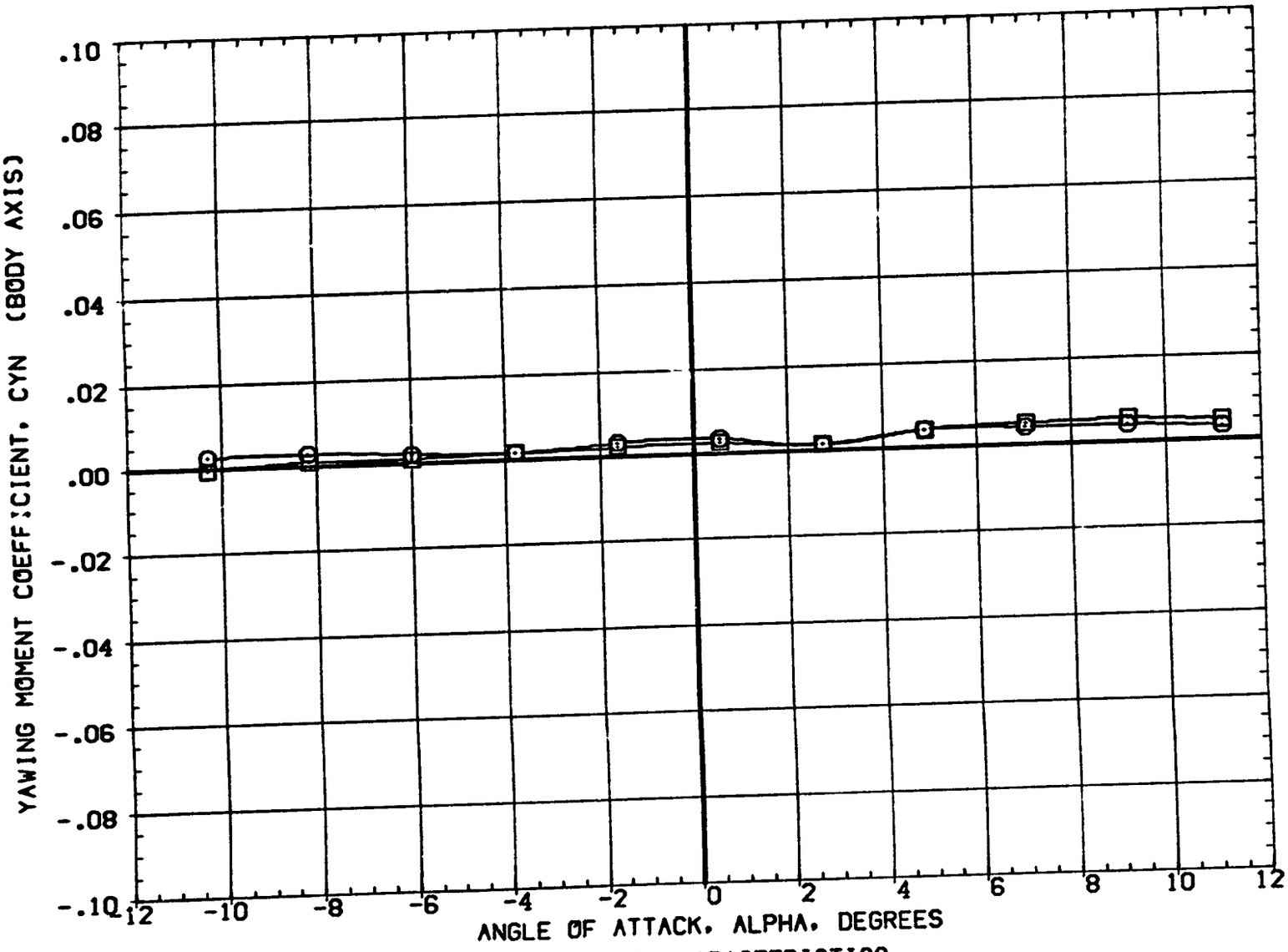
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(890000)		MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890200)		MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



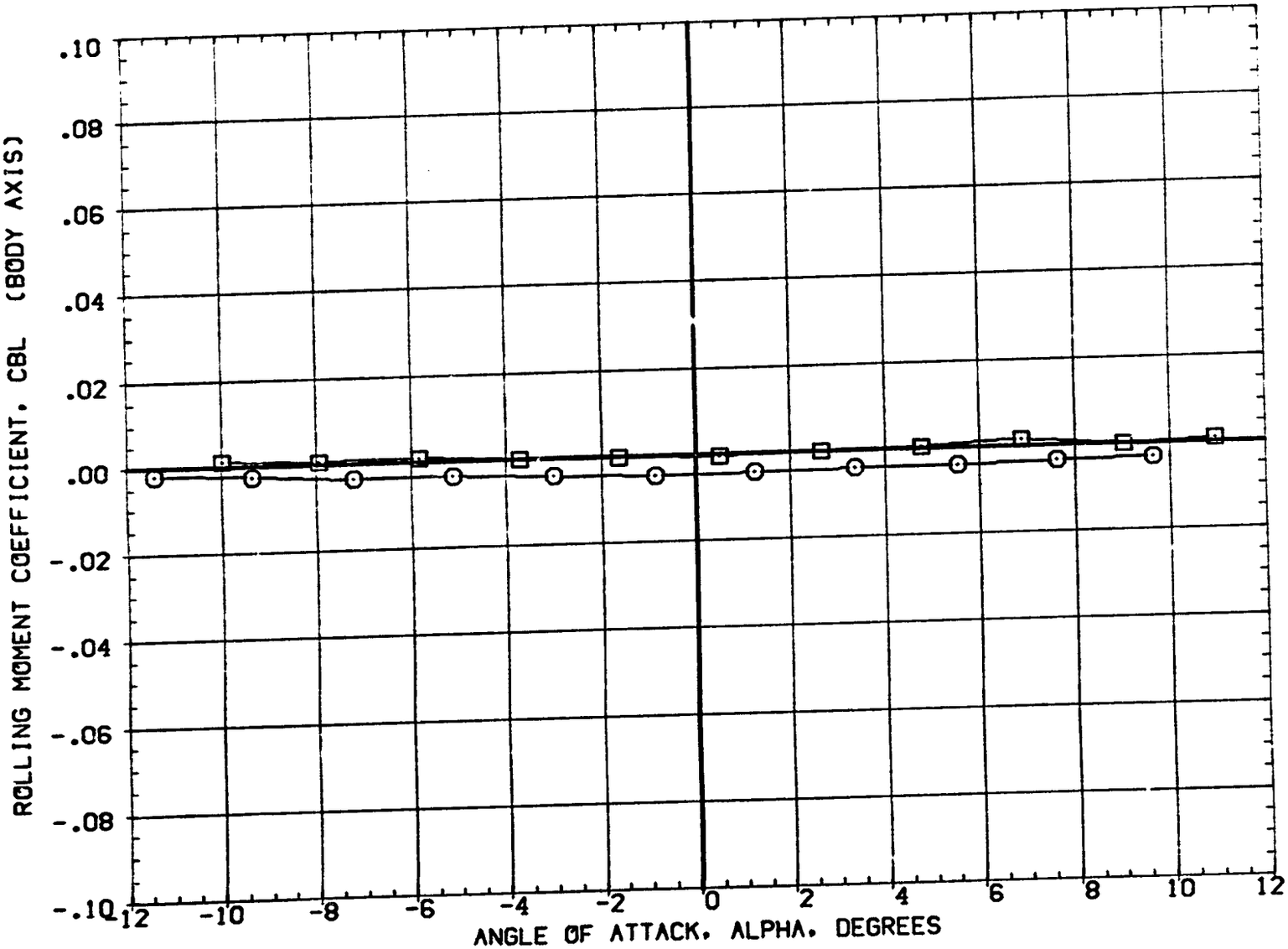
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



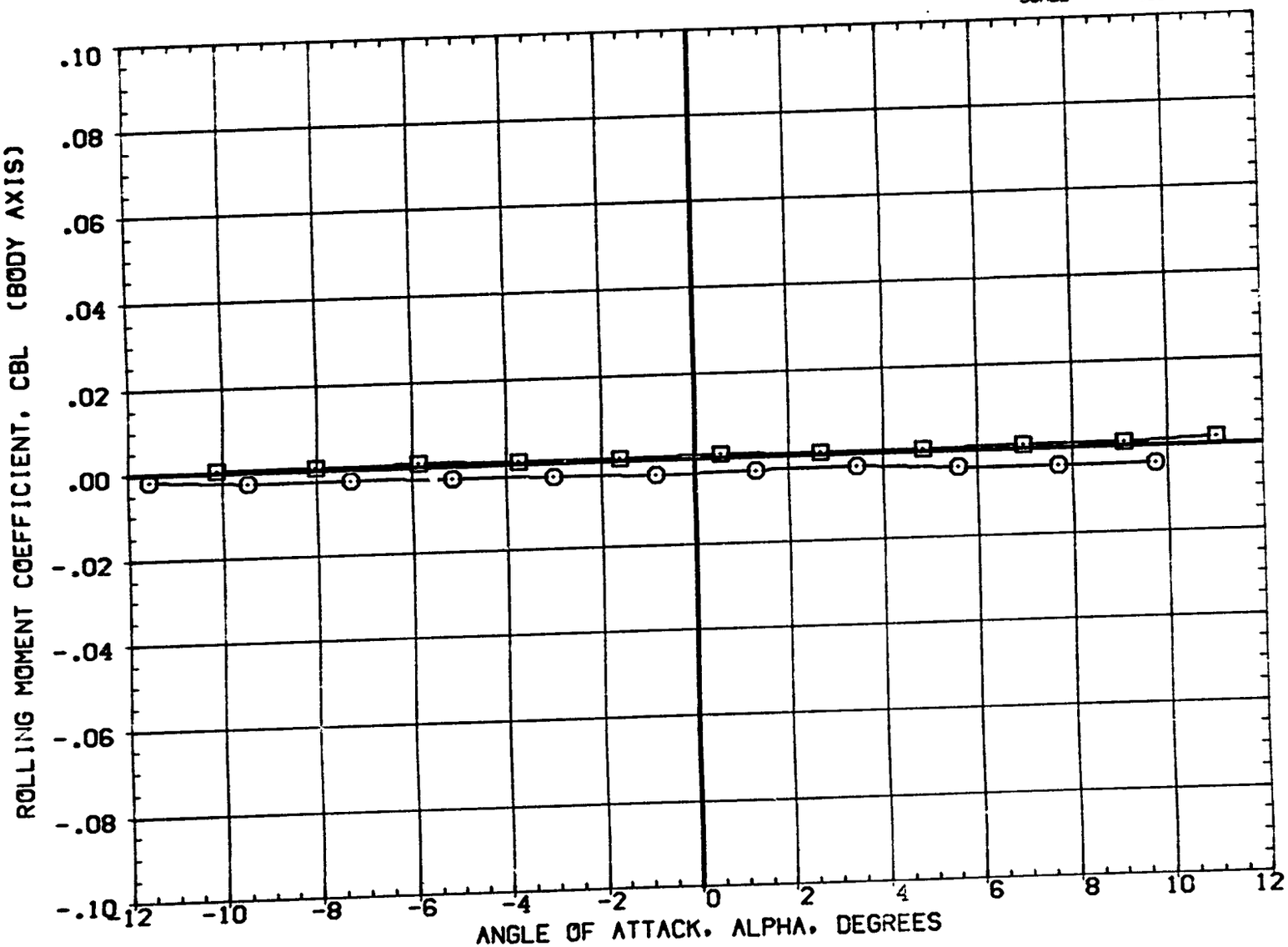
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



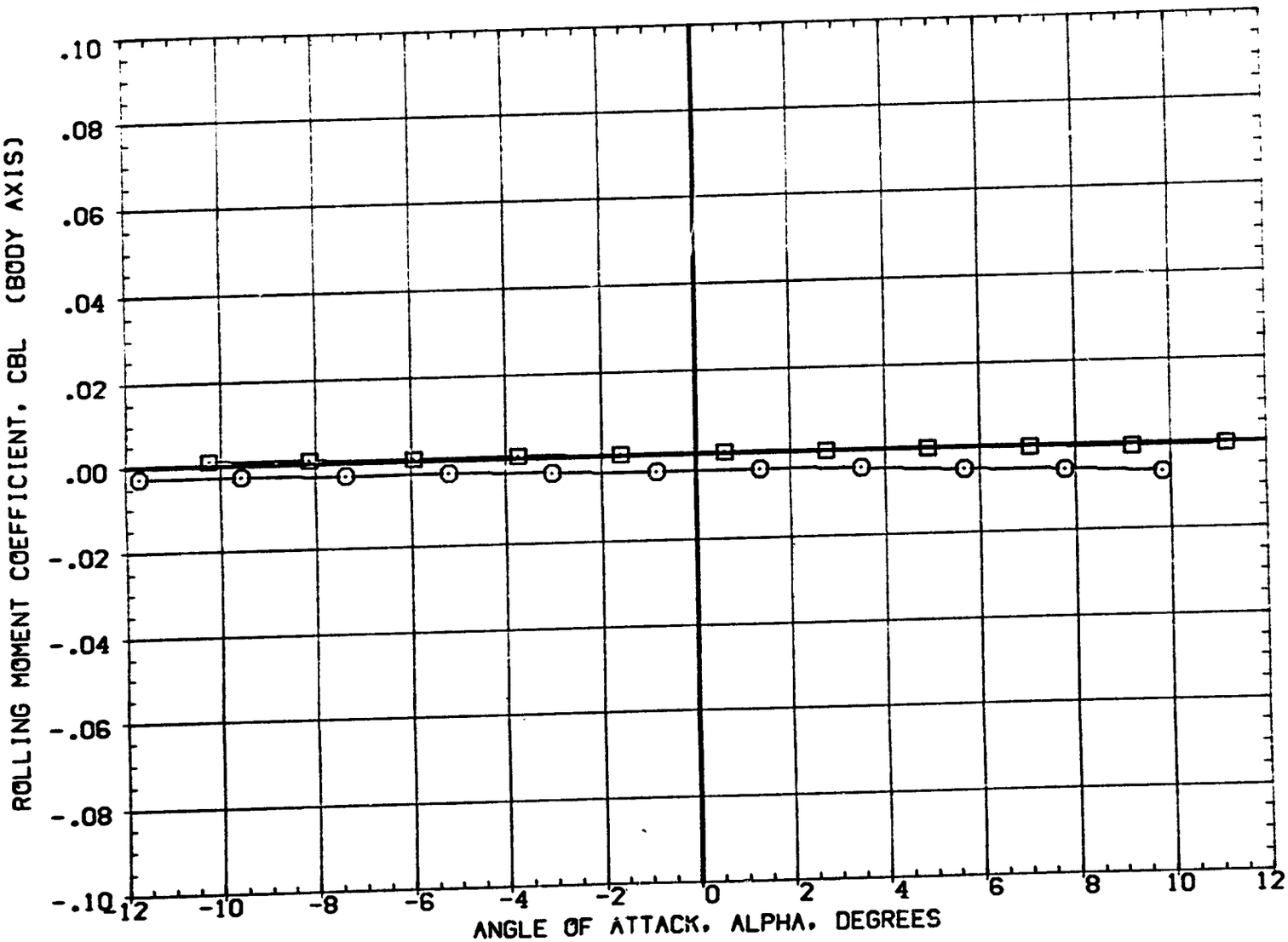
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90C00)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90200)	□	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



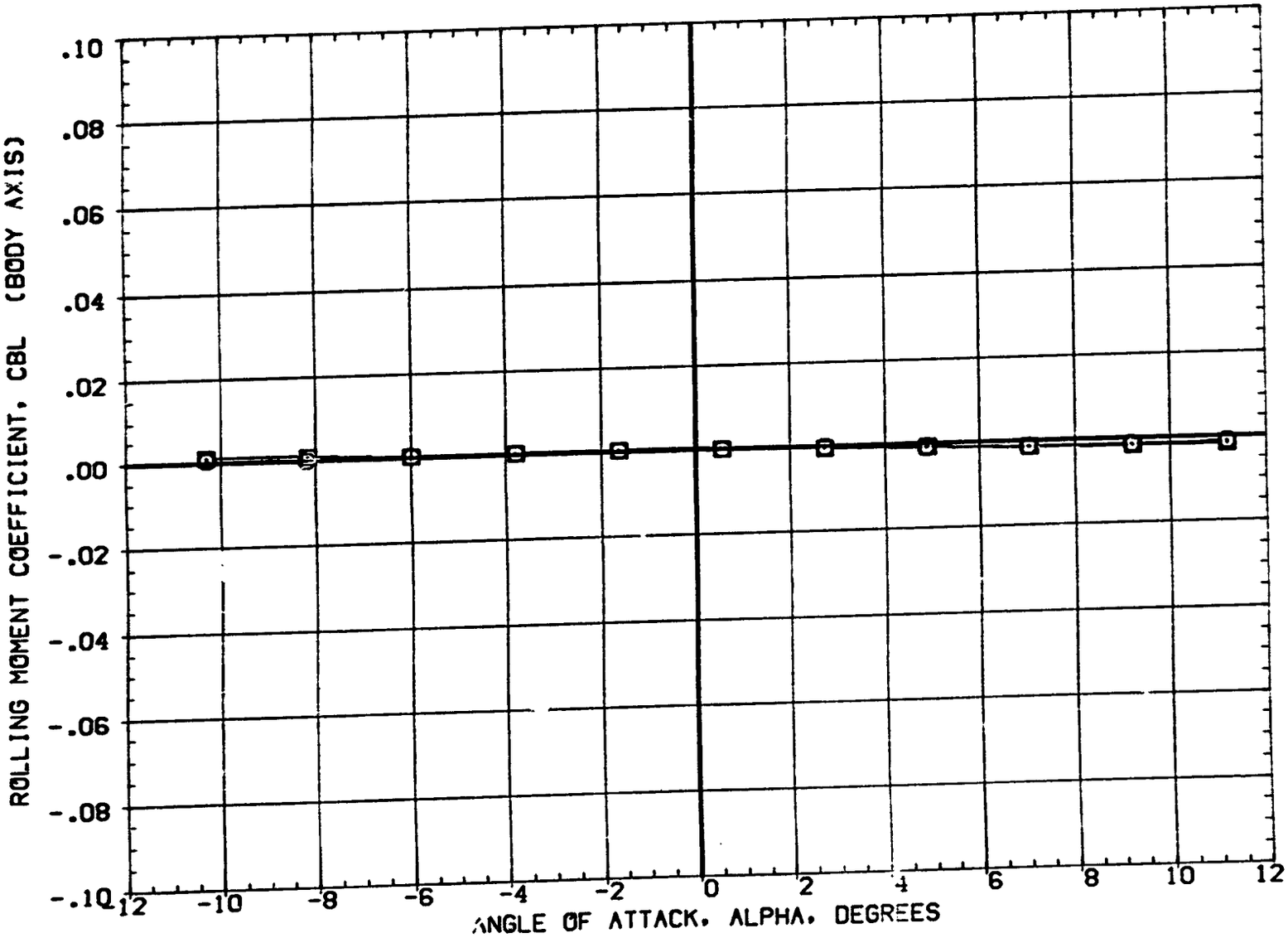
EFFECT OF ORBITER ROLL ON AEPODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBROL
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90200)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



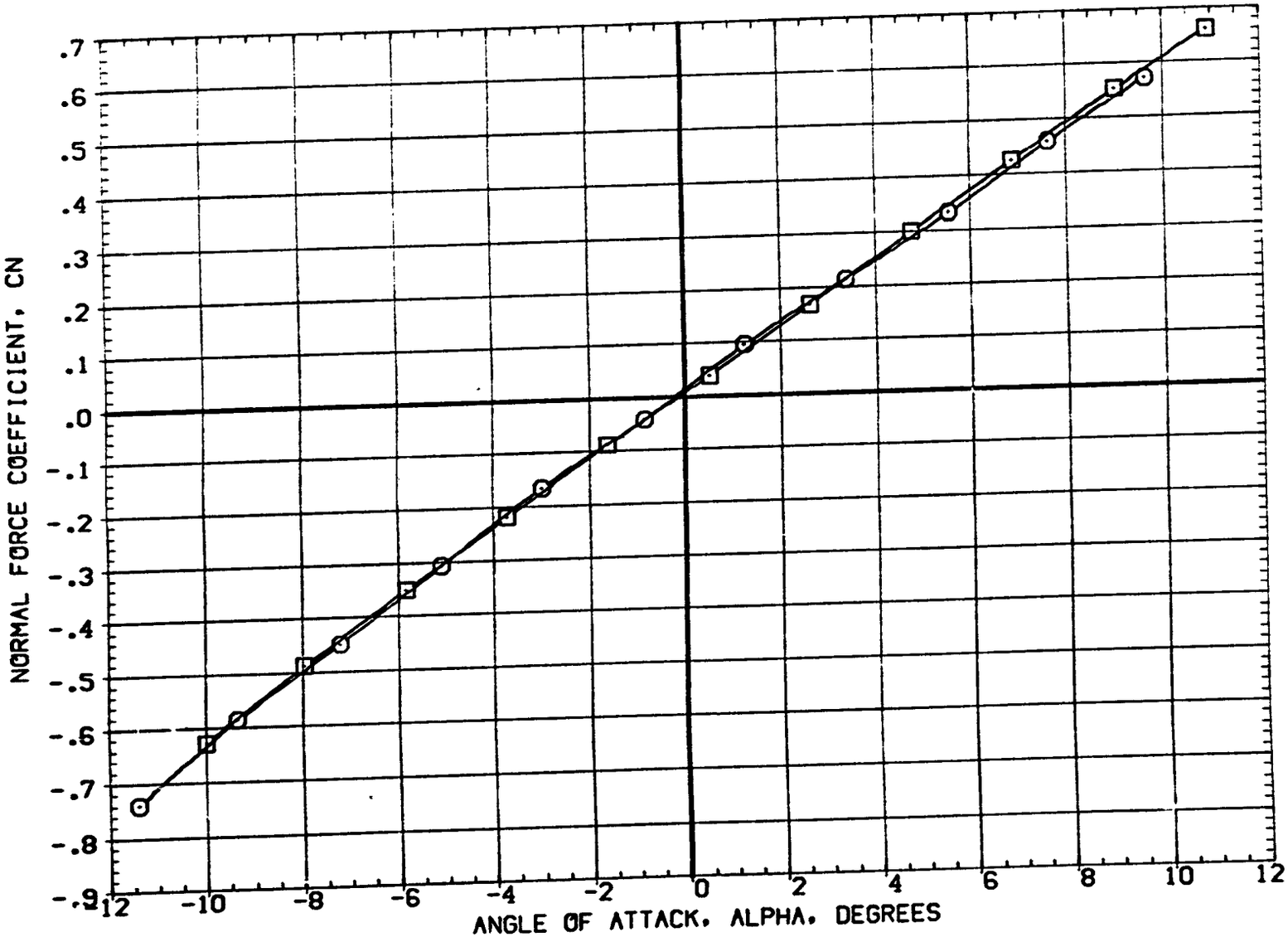
EFFECT OF ORBITER ROLL ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



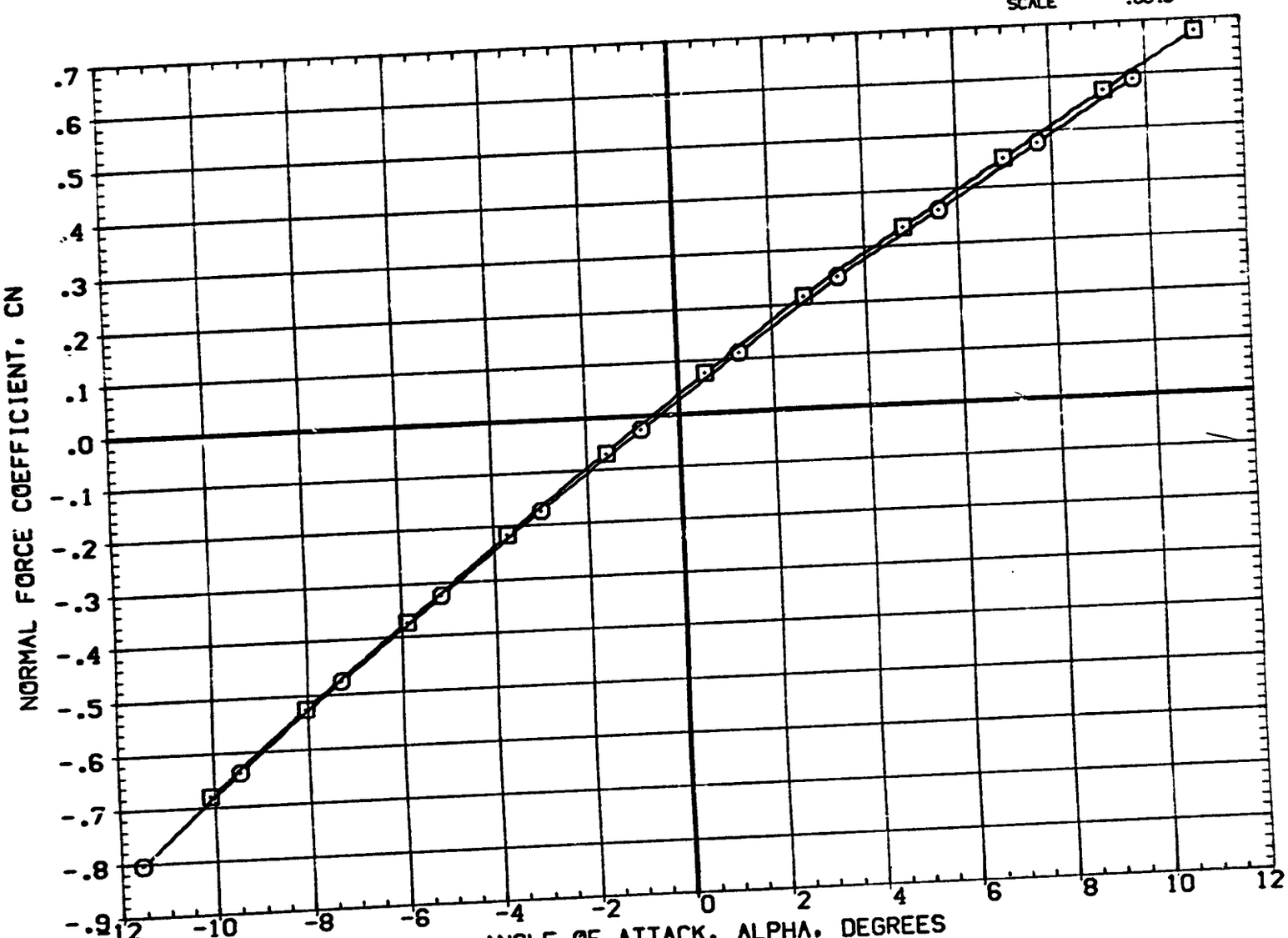
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



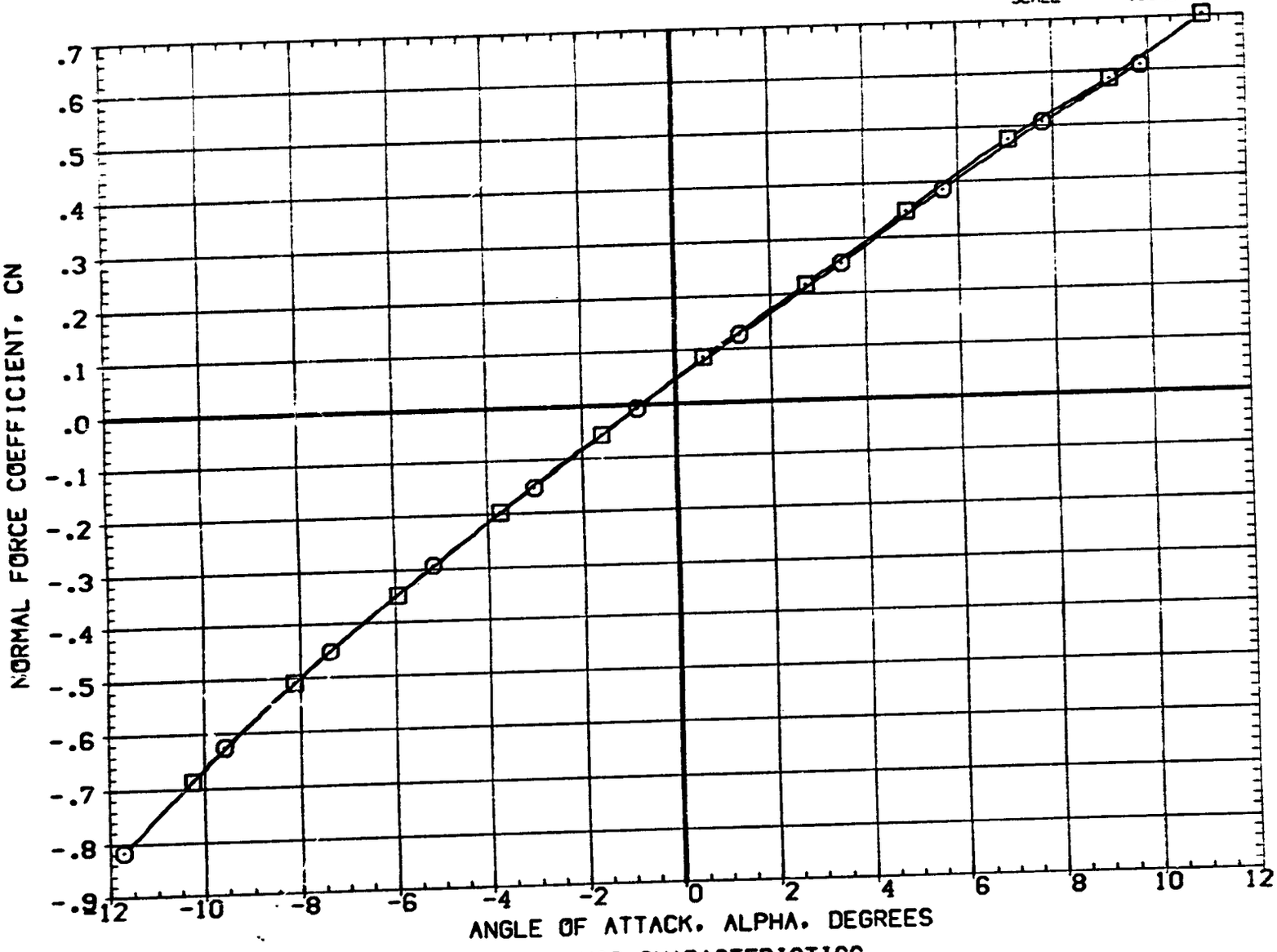
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(IA3)FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(IA3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



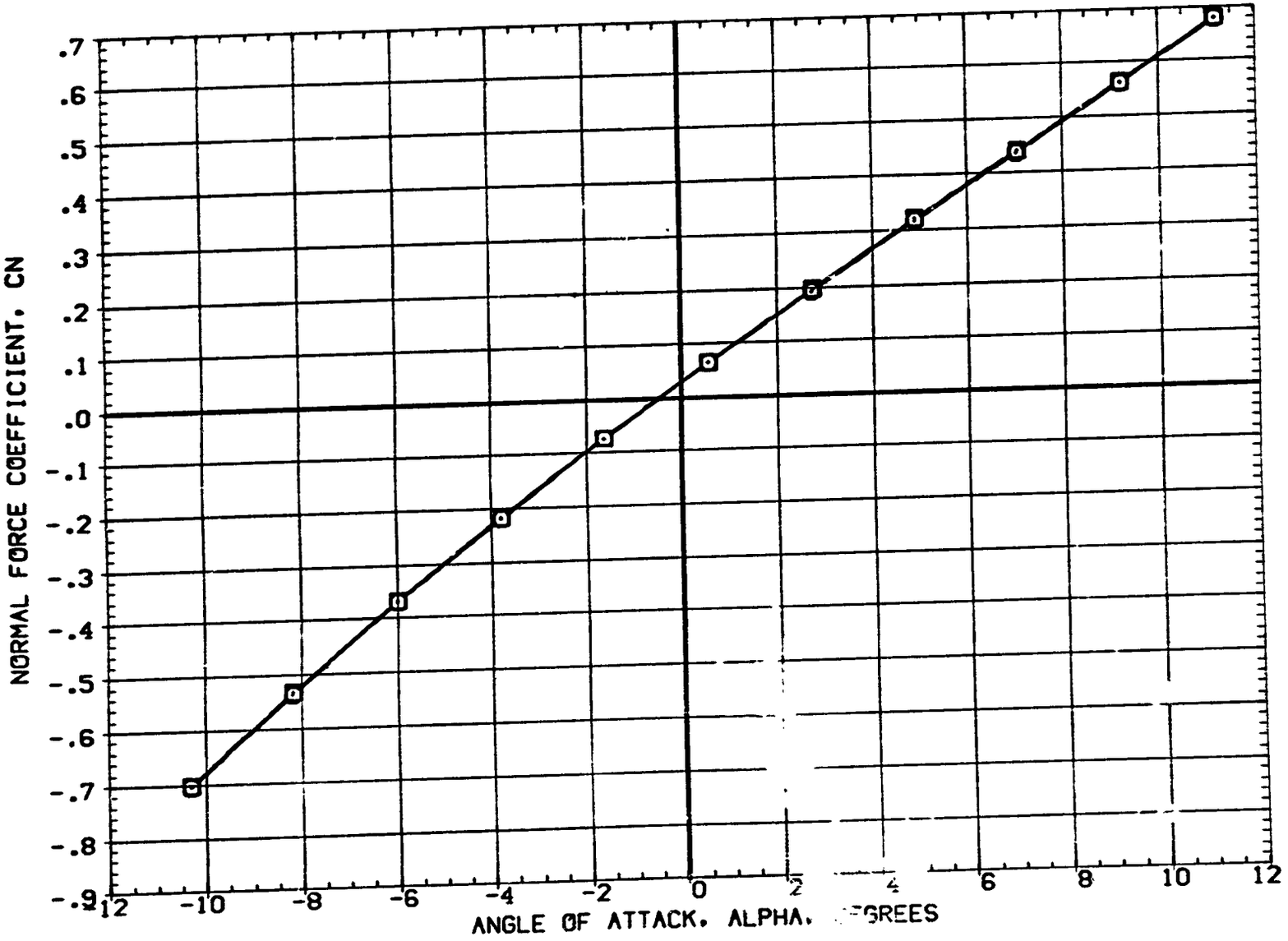
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



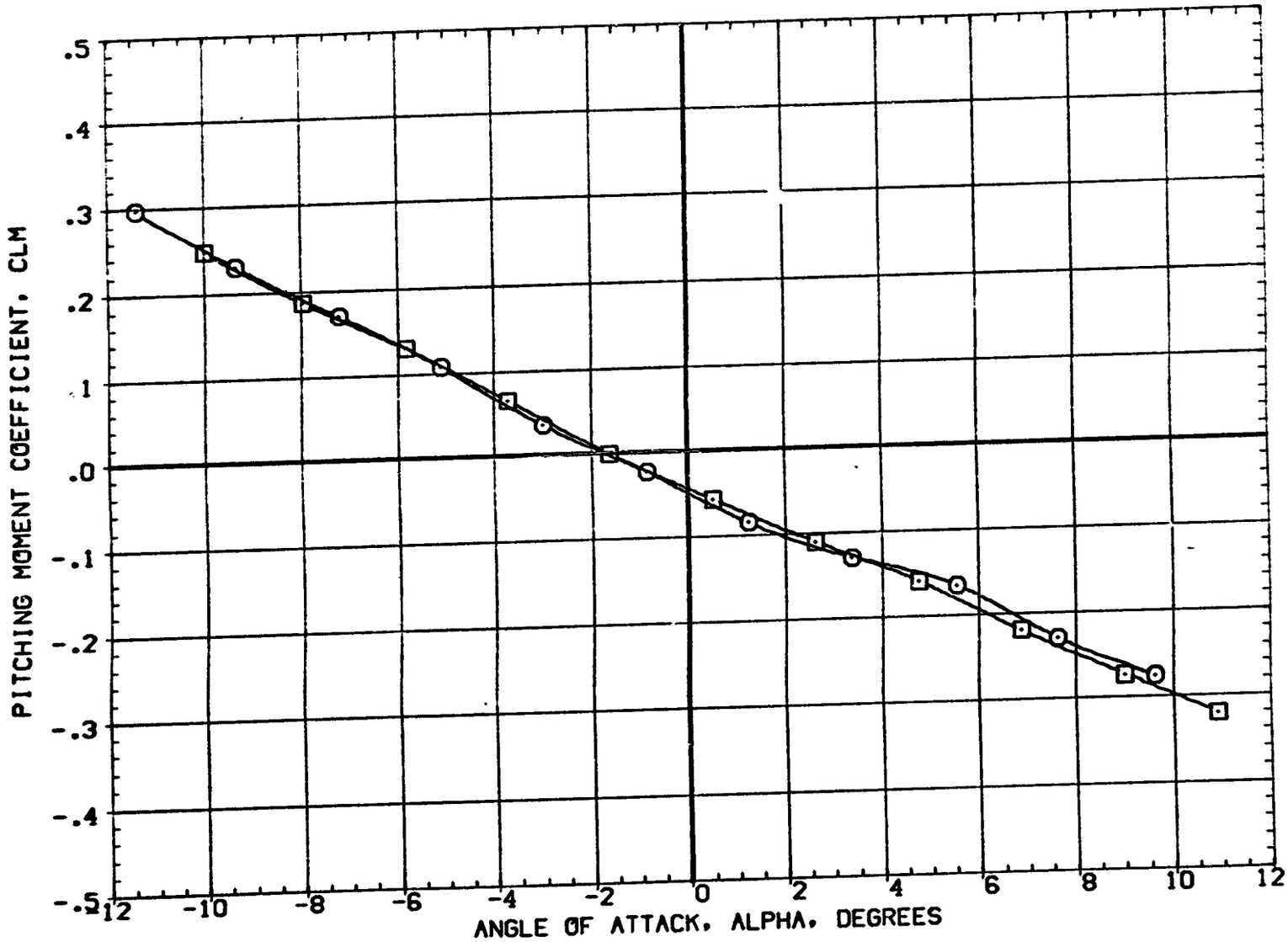
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(890201) □	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



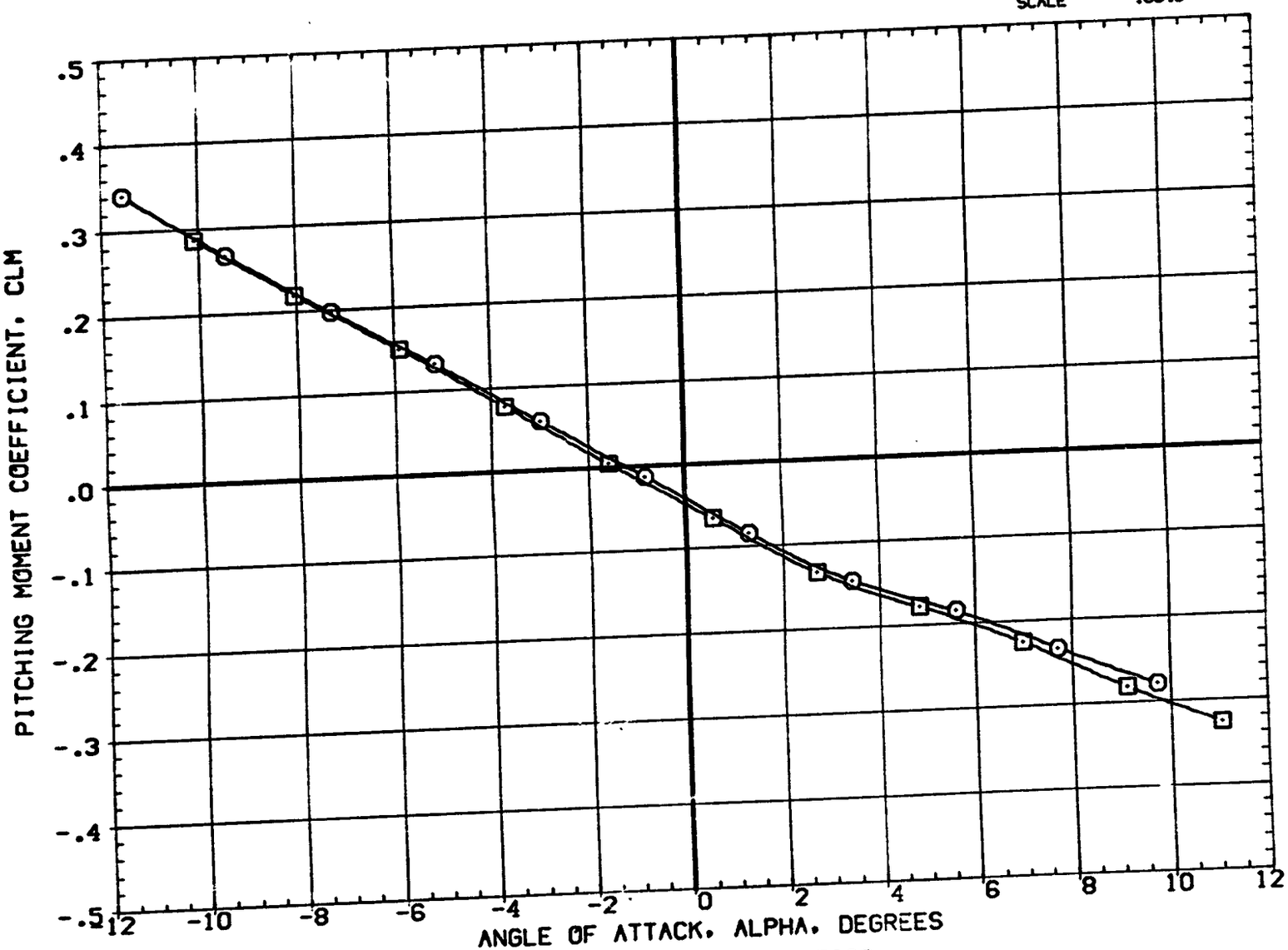
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



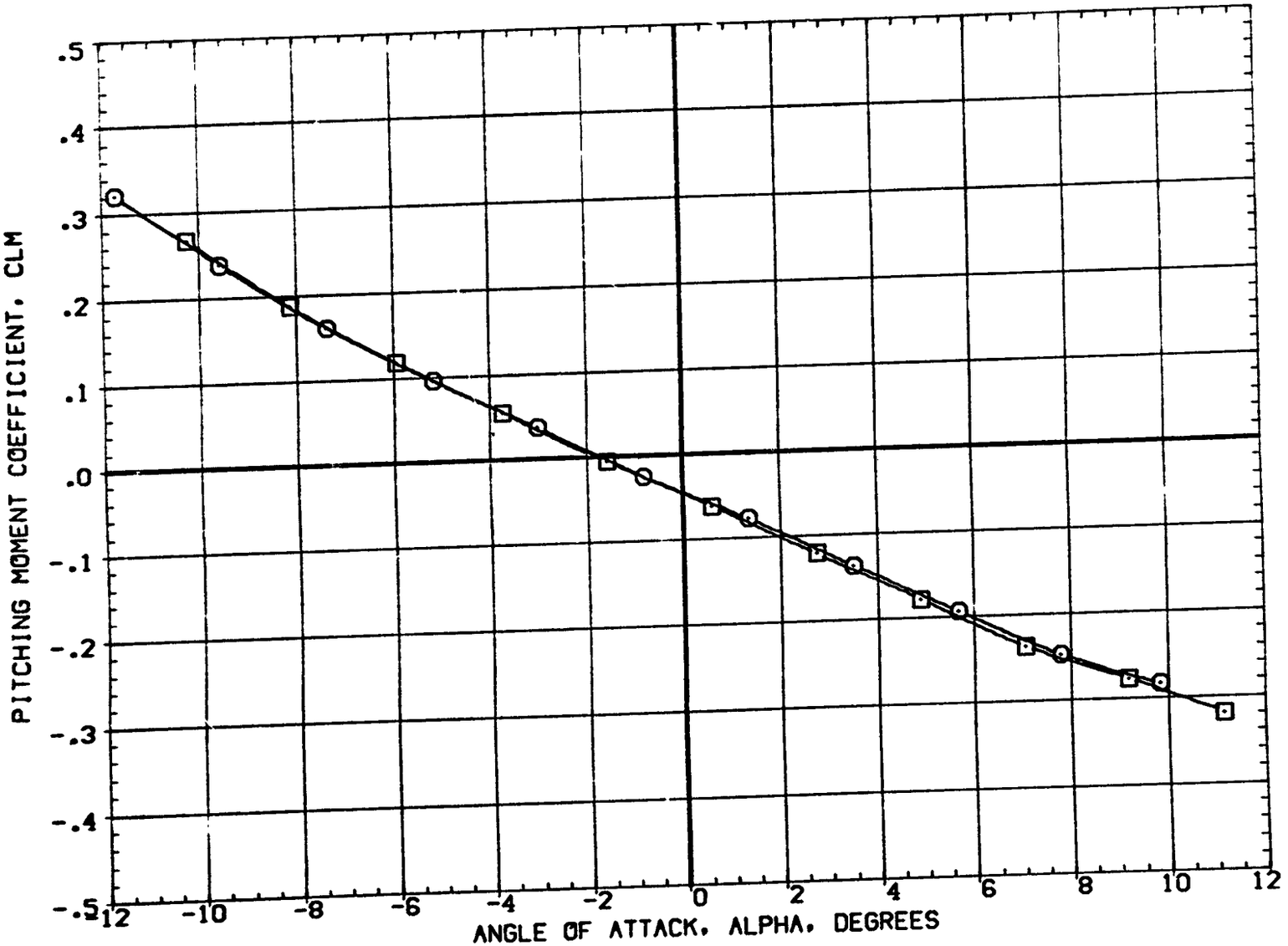
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



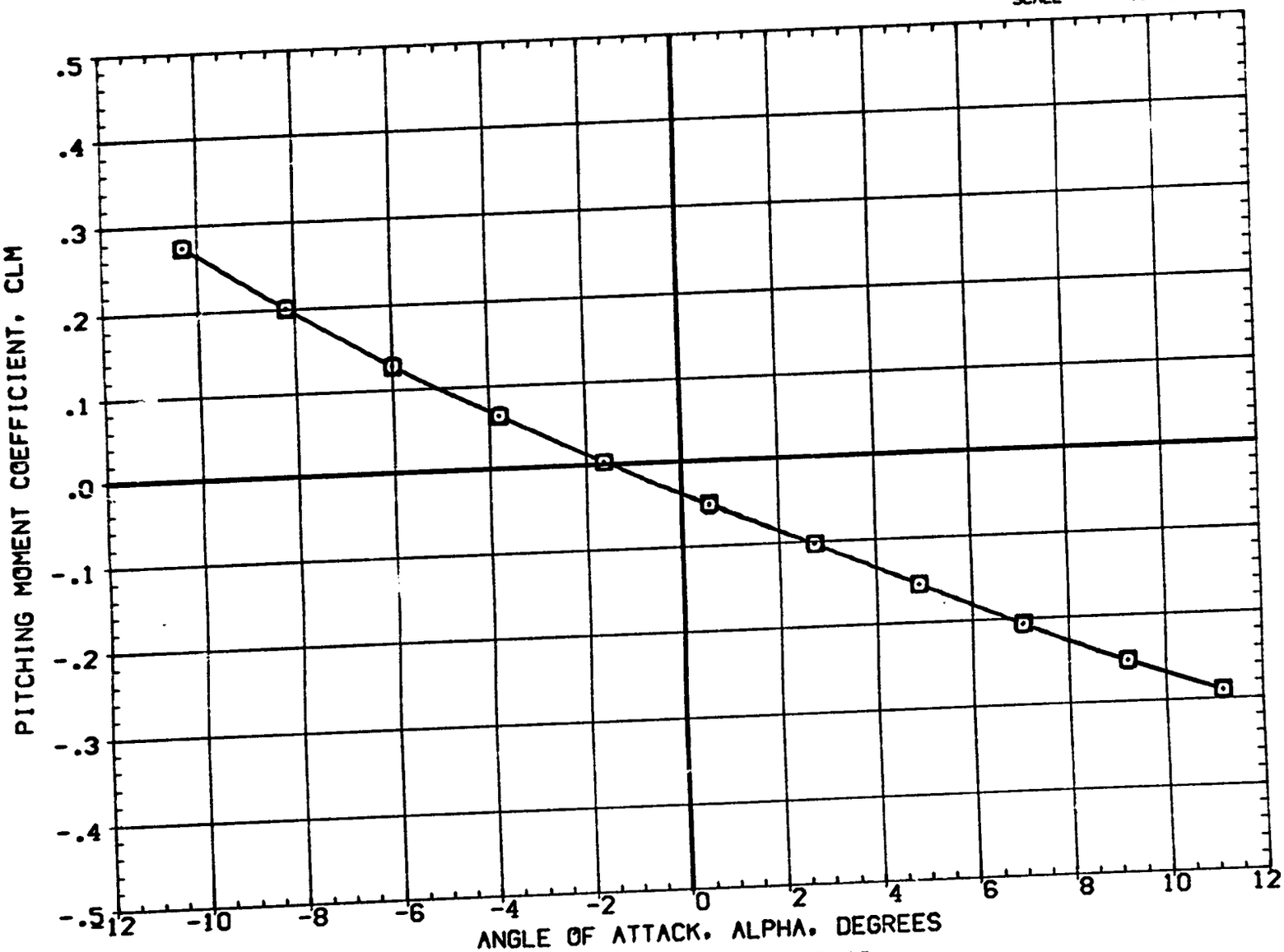
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(890201)	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



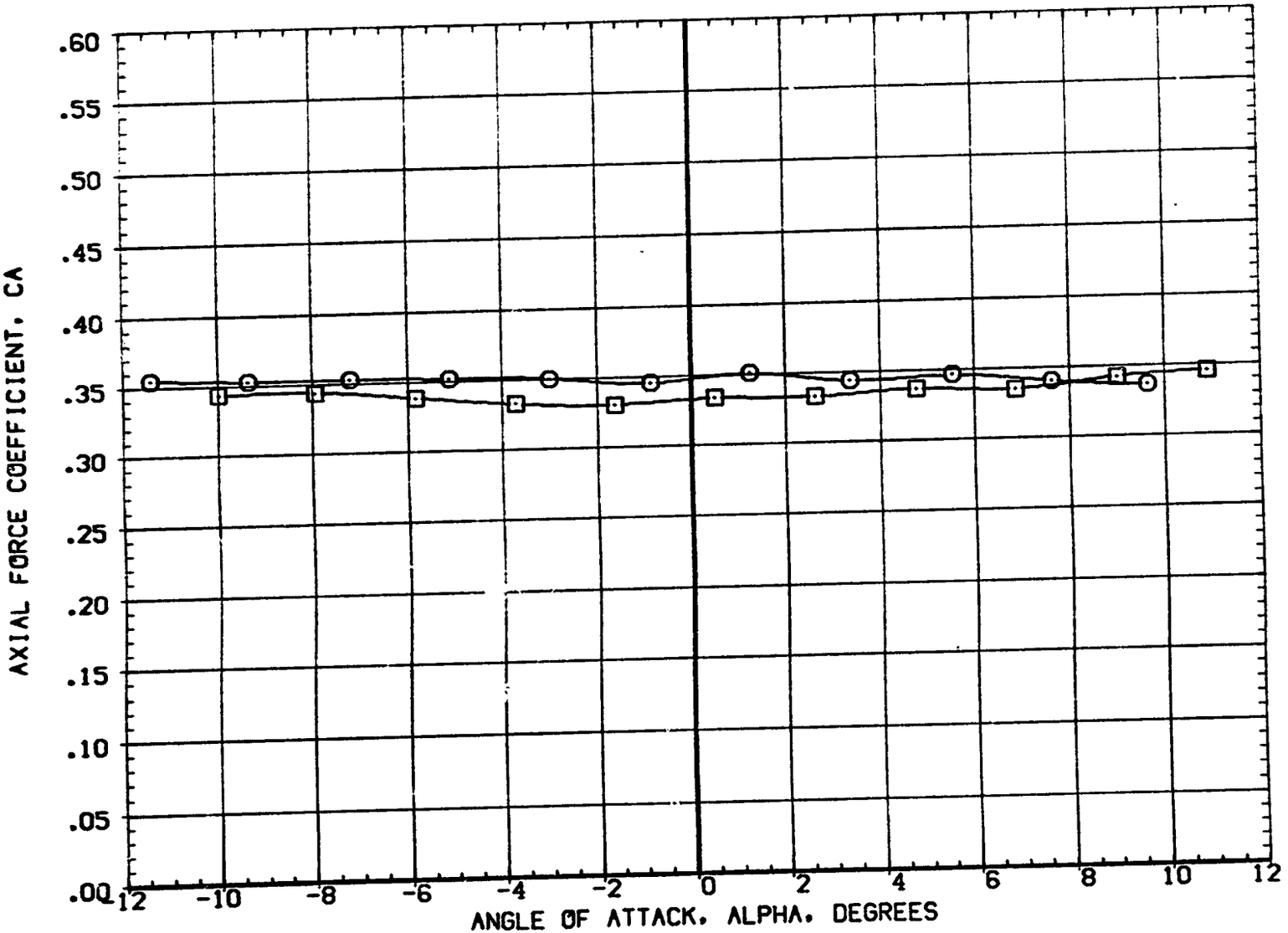
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890201) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



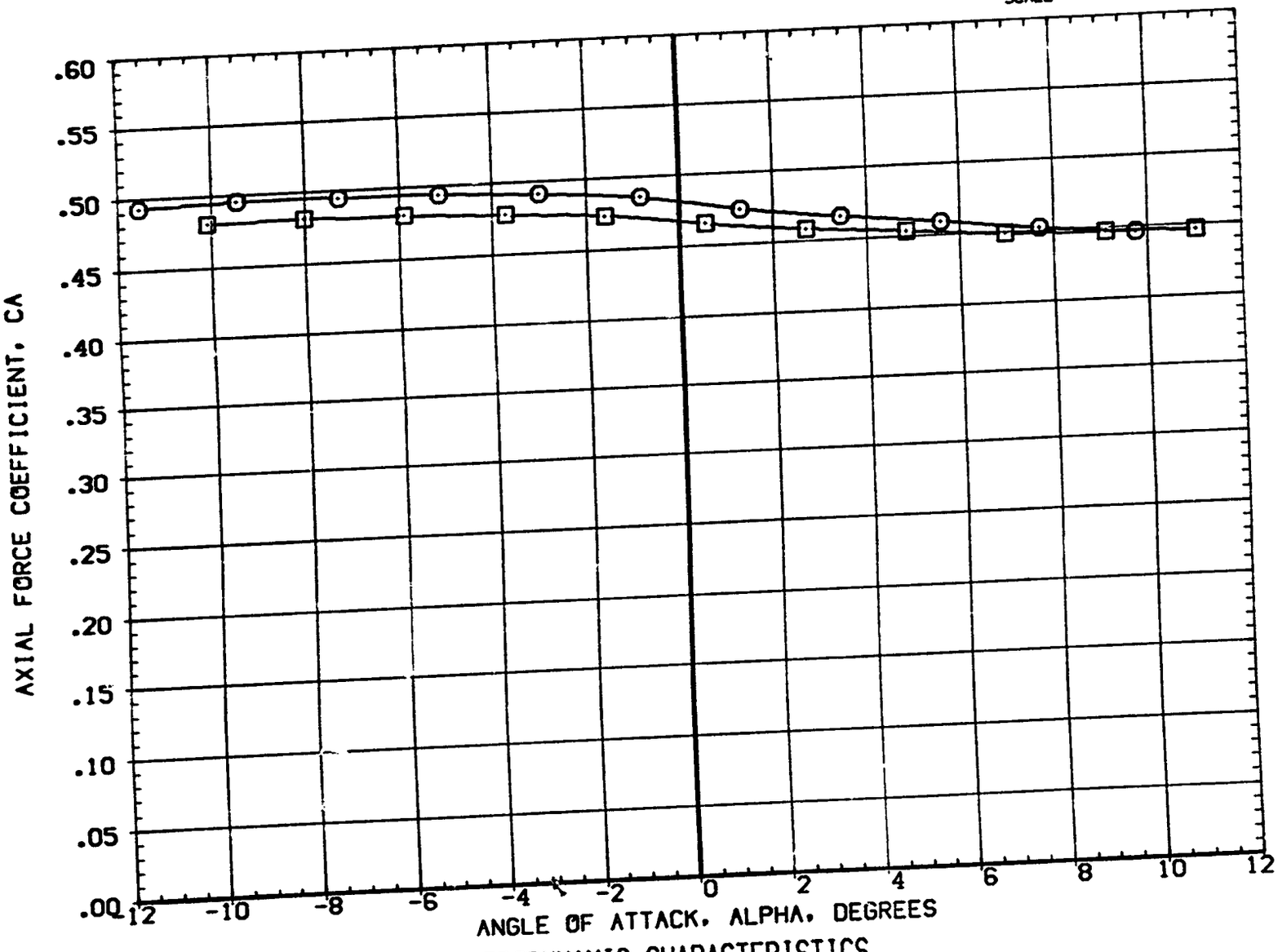
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



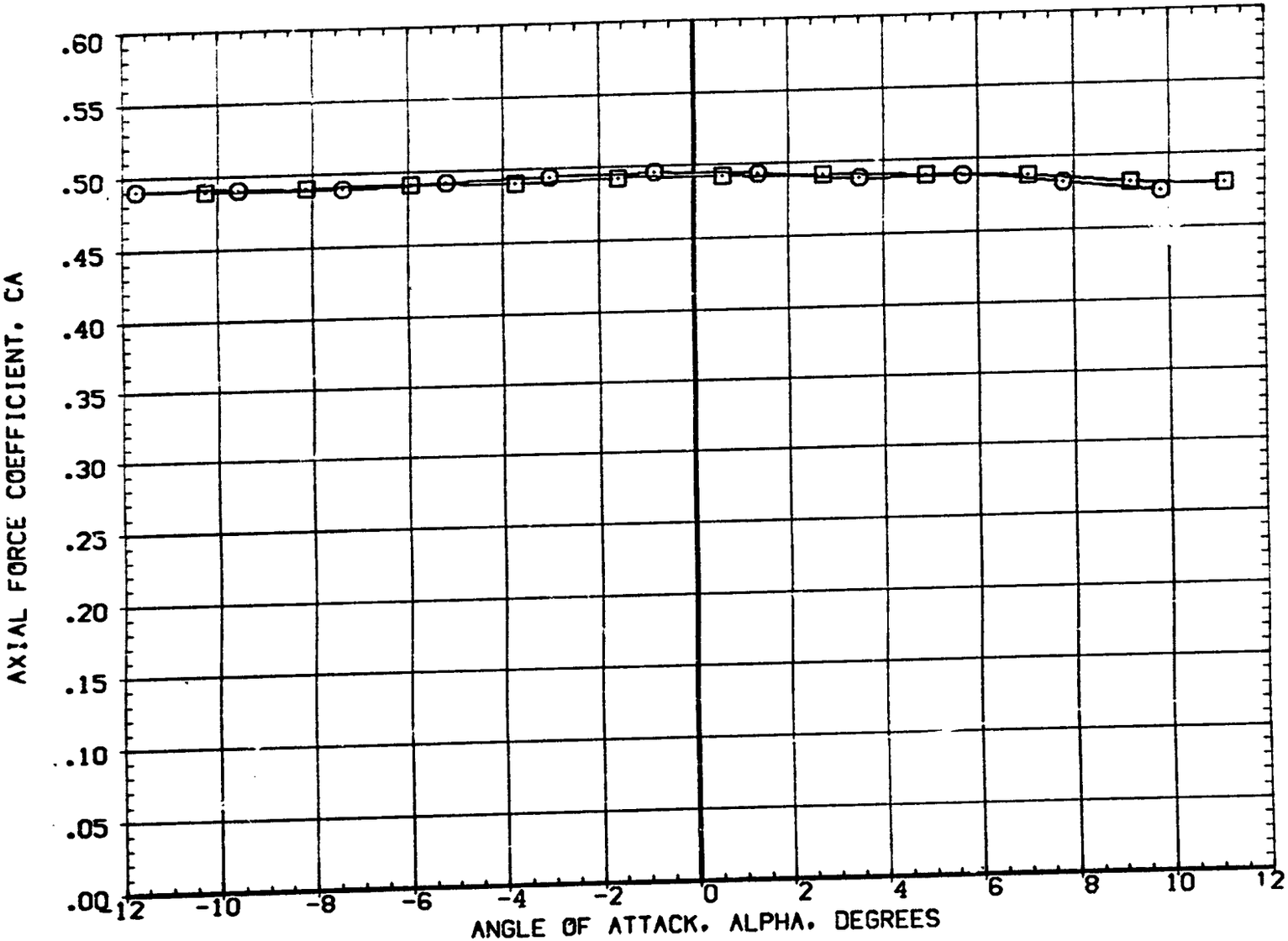
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573([A31FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573([A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



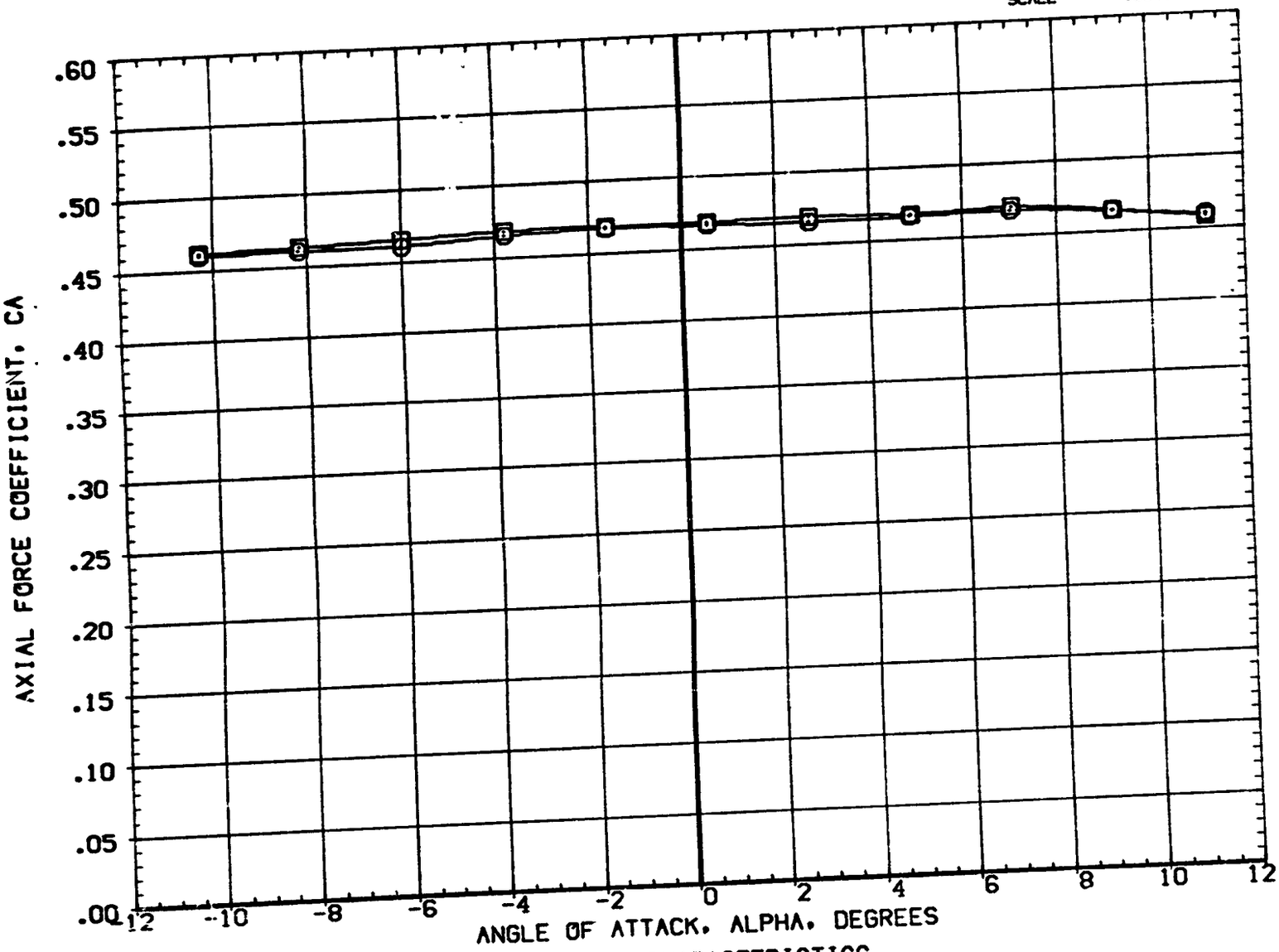
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



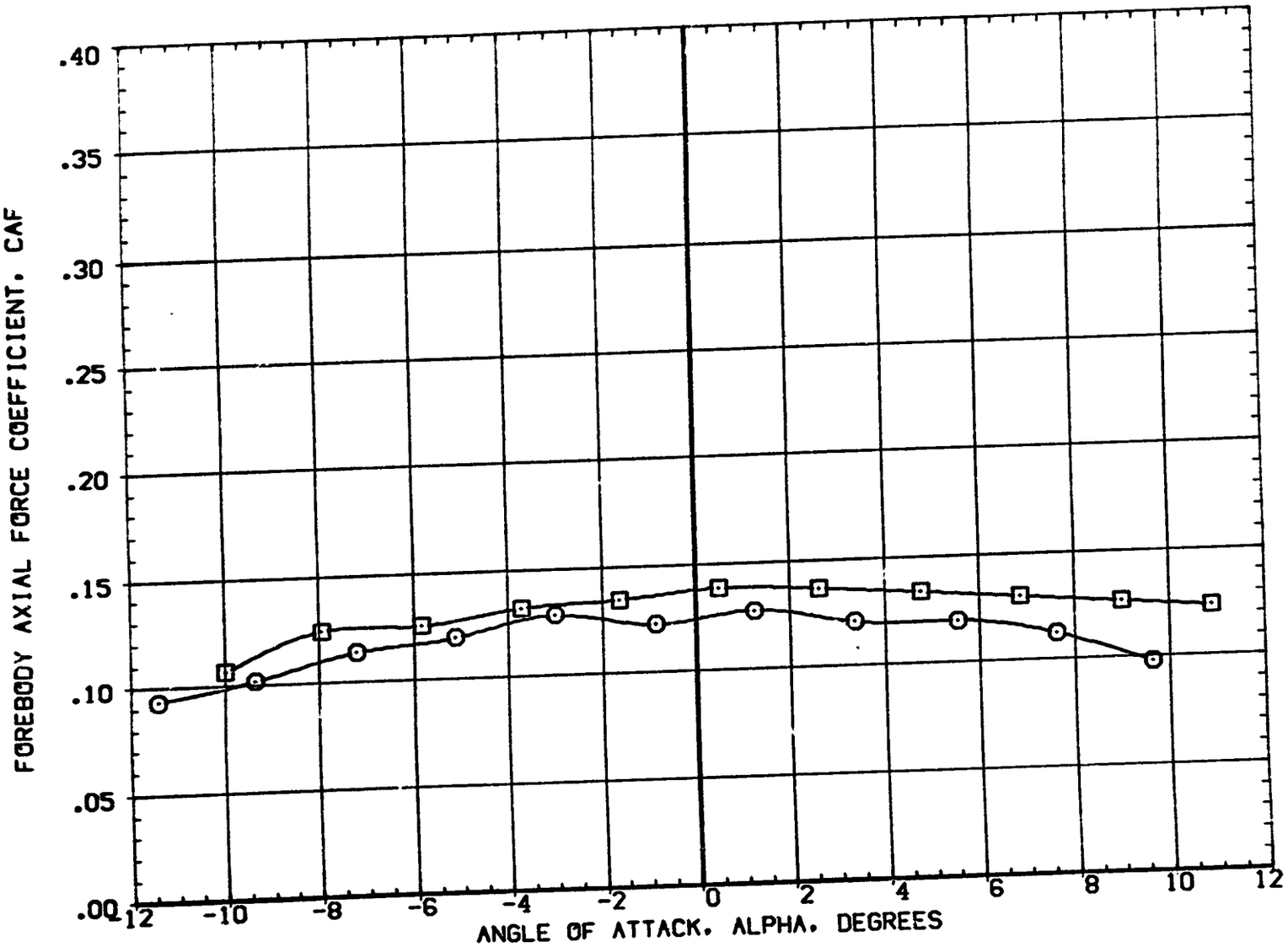
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
[890000] ○	MSFC 573([A3IFC) ([03)([T9)([S3)	.500	.140	
[890201] □	MSFC 573([A3IFC) ([03)([T9)([S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



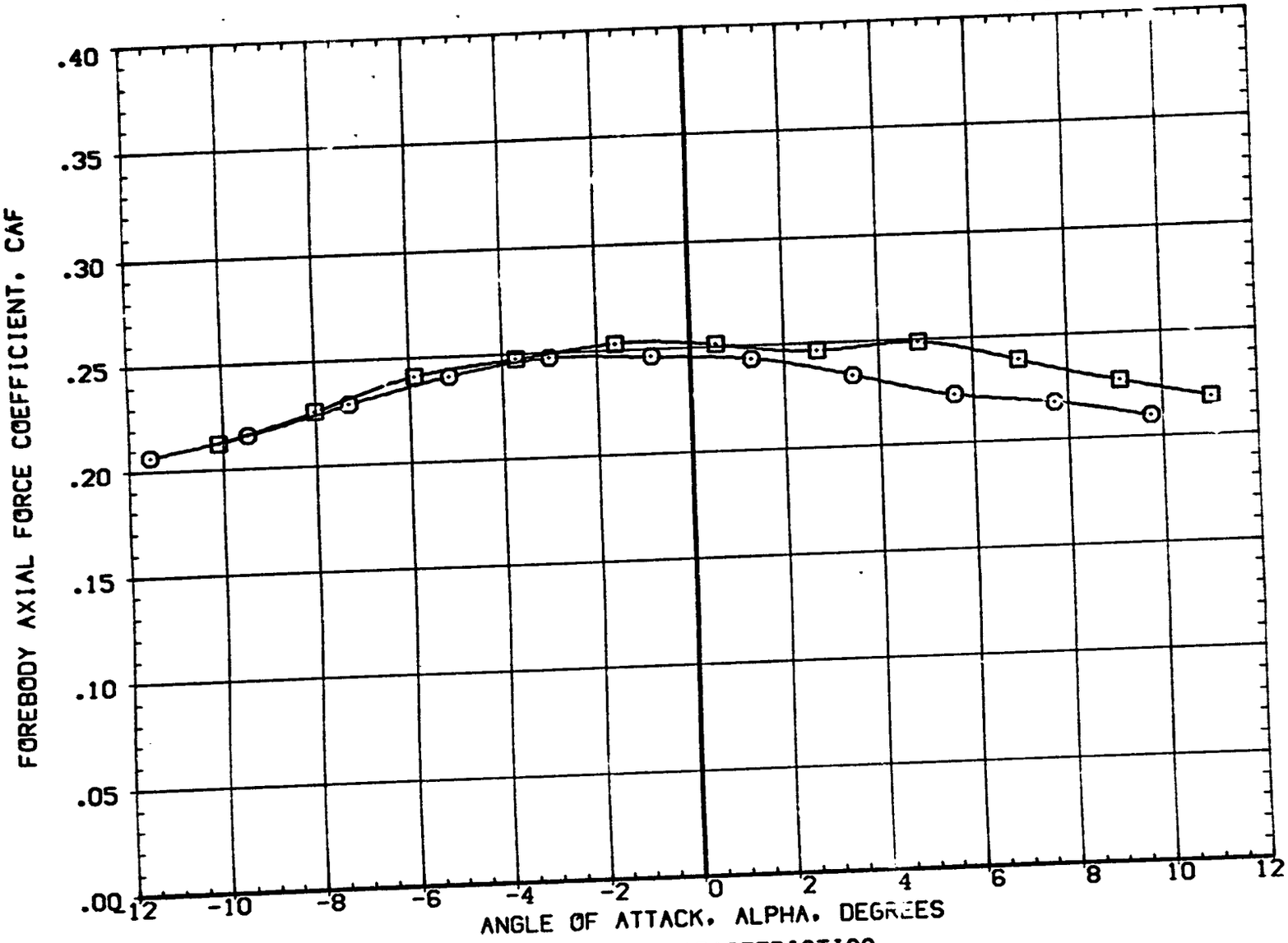
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



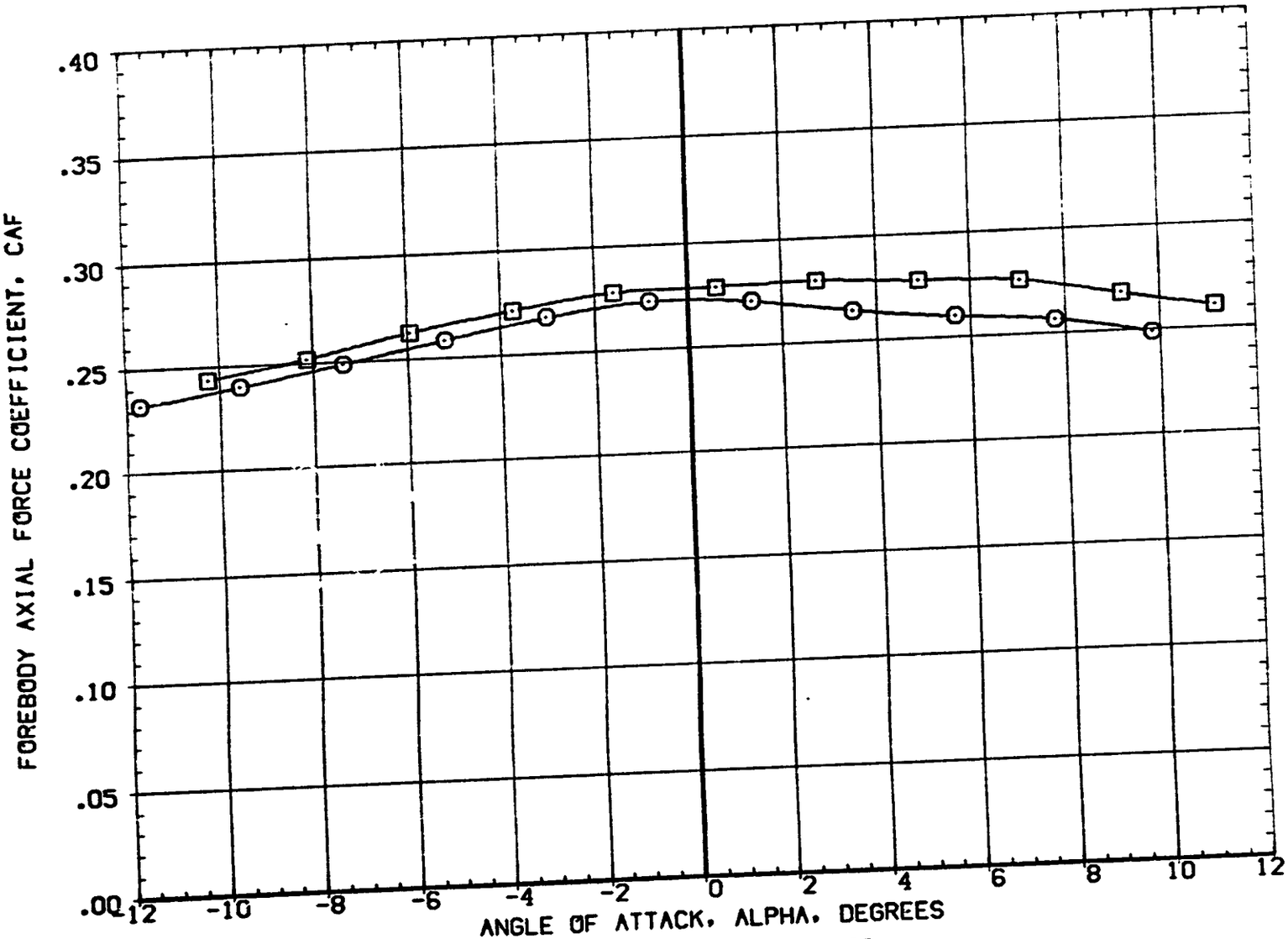
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890201)	□	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



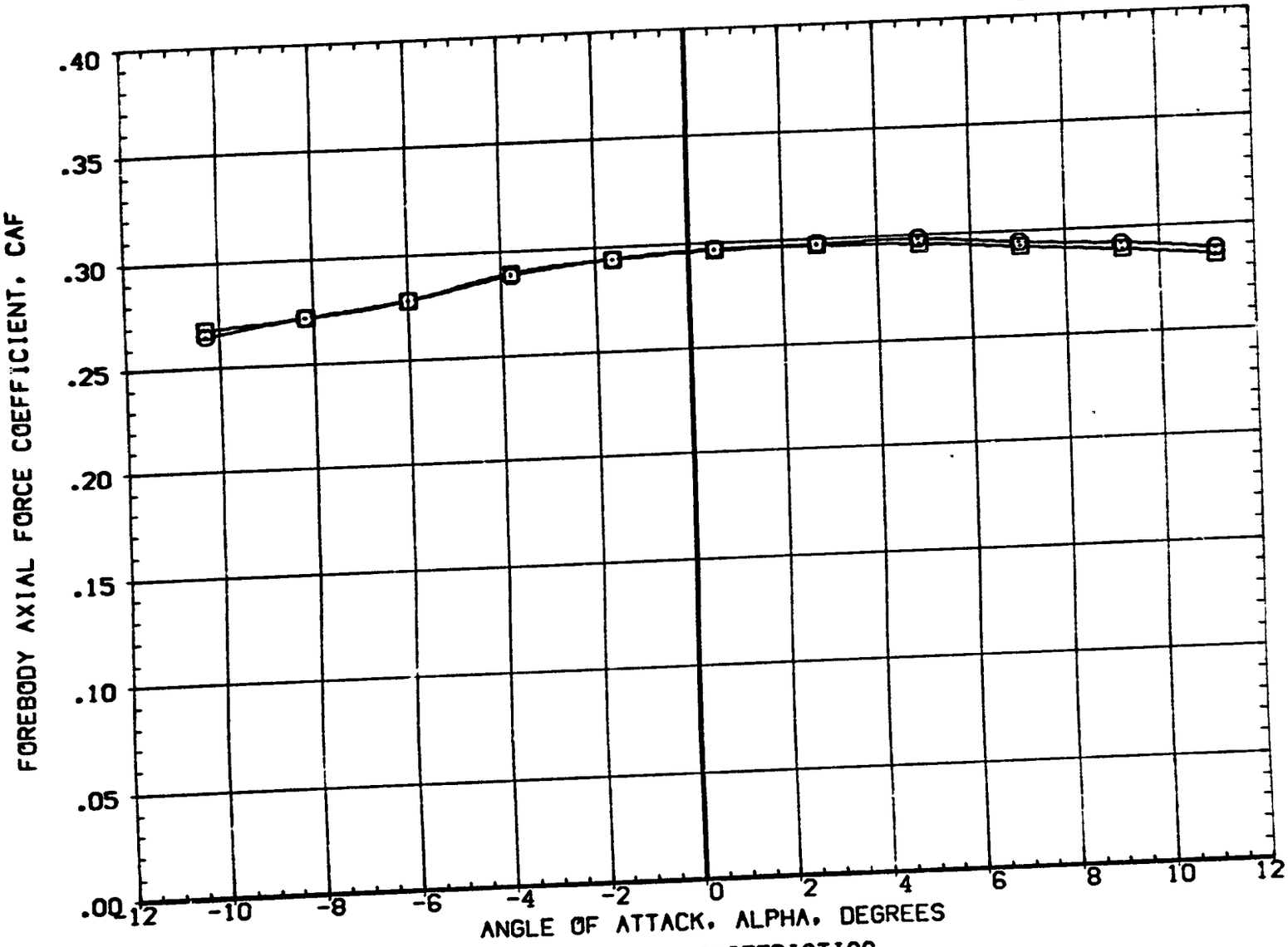
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



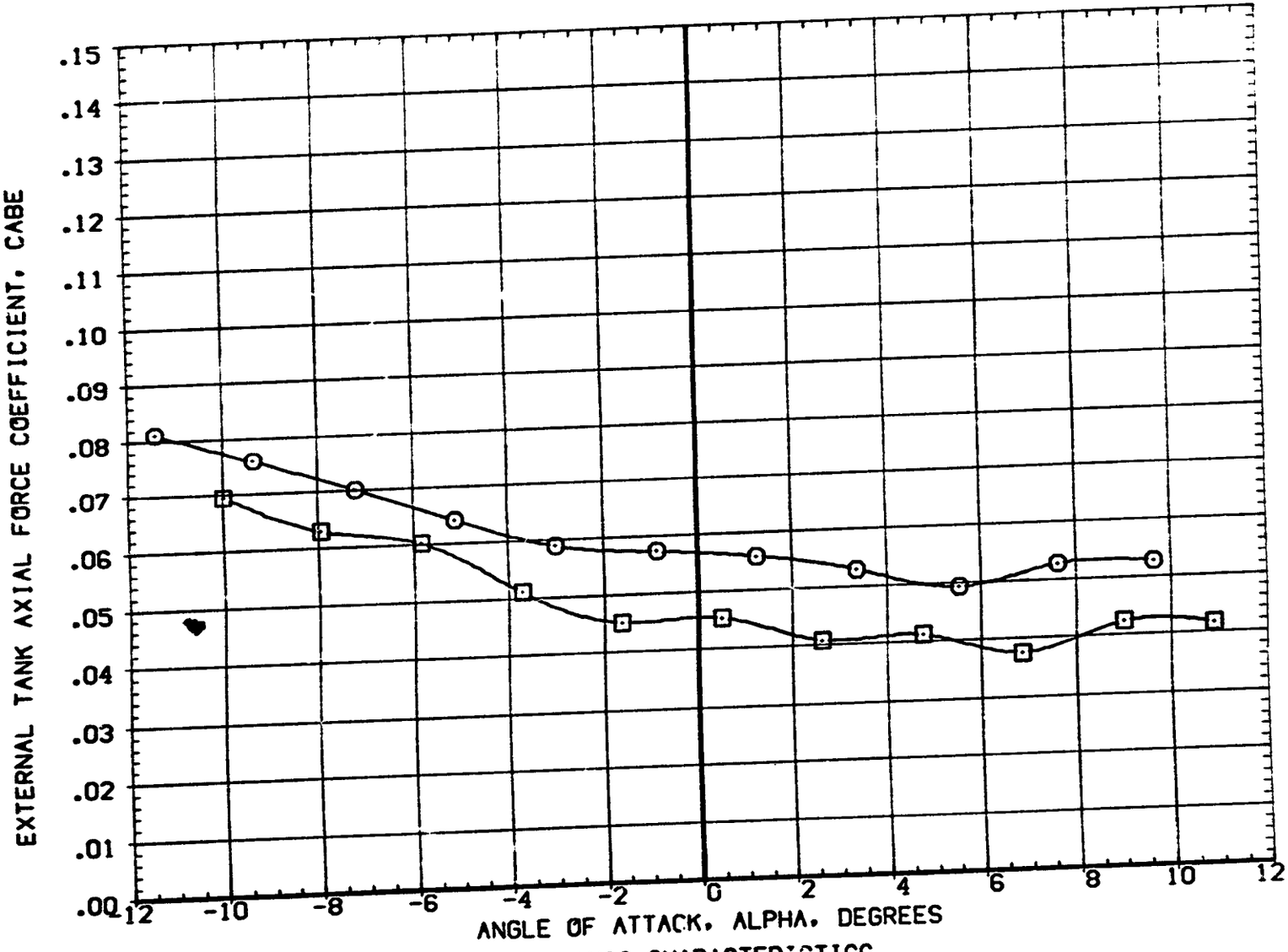
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



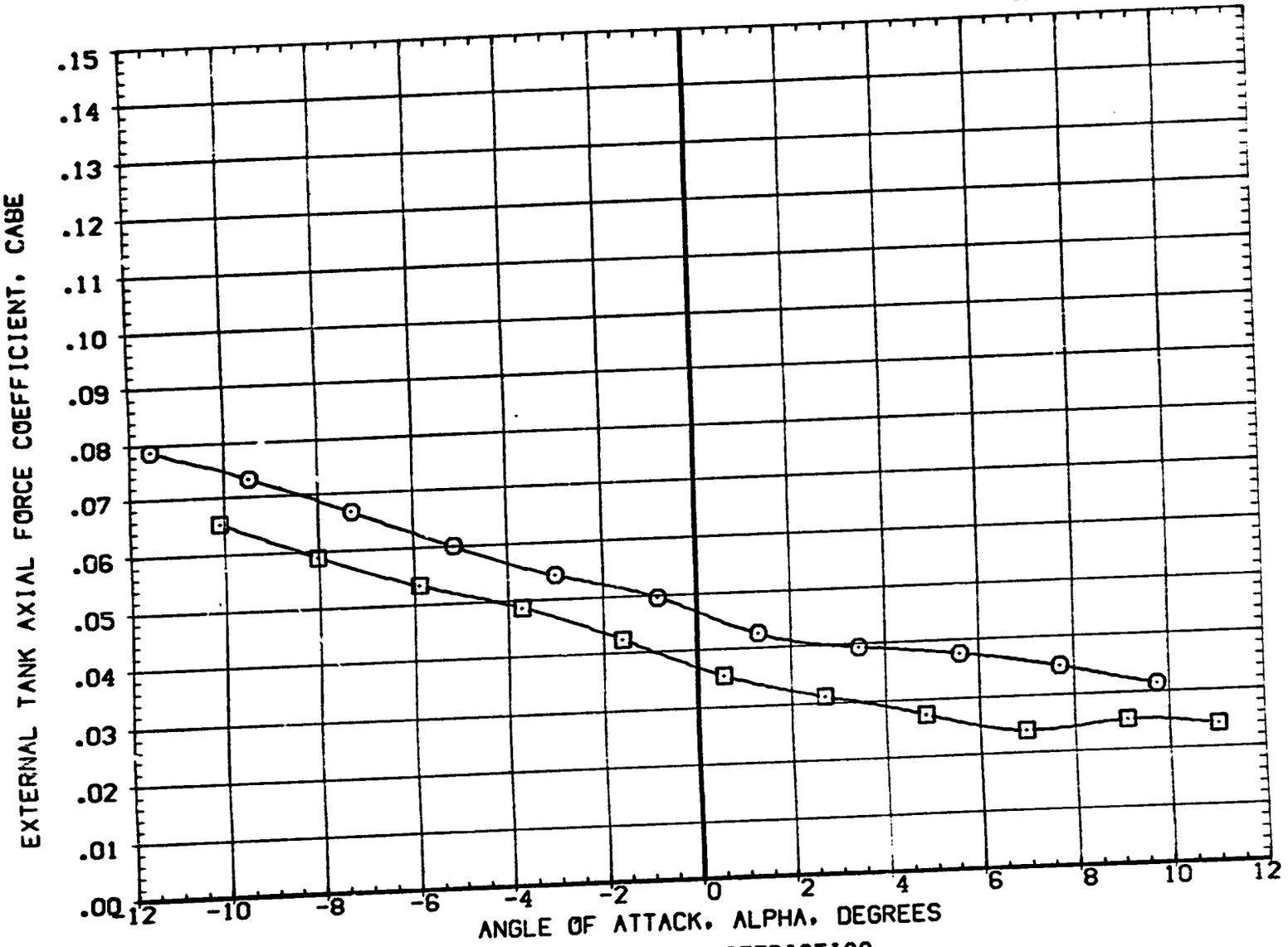
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



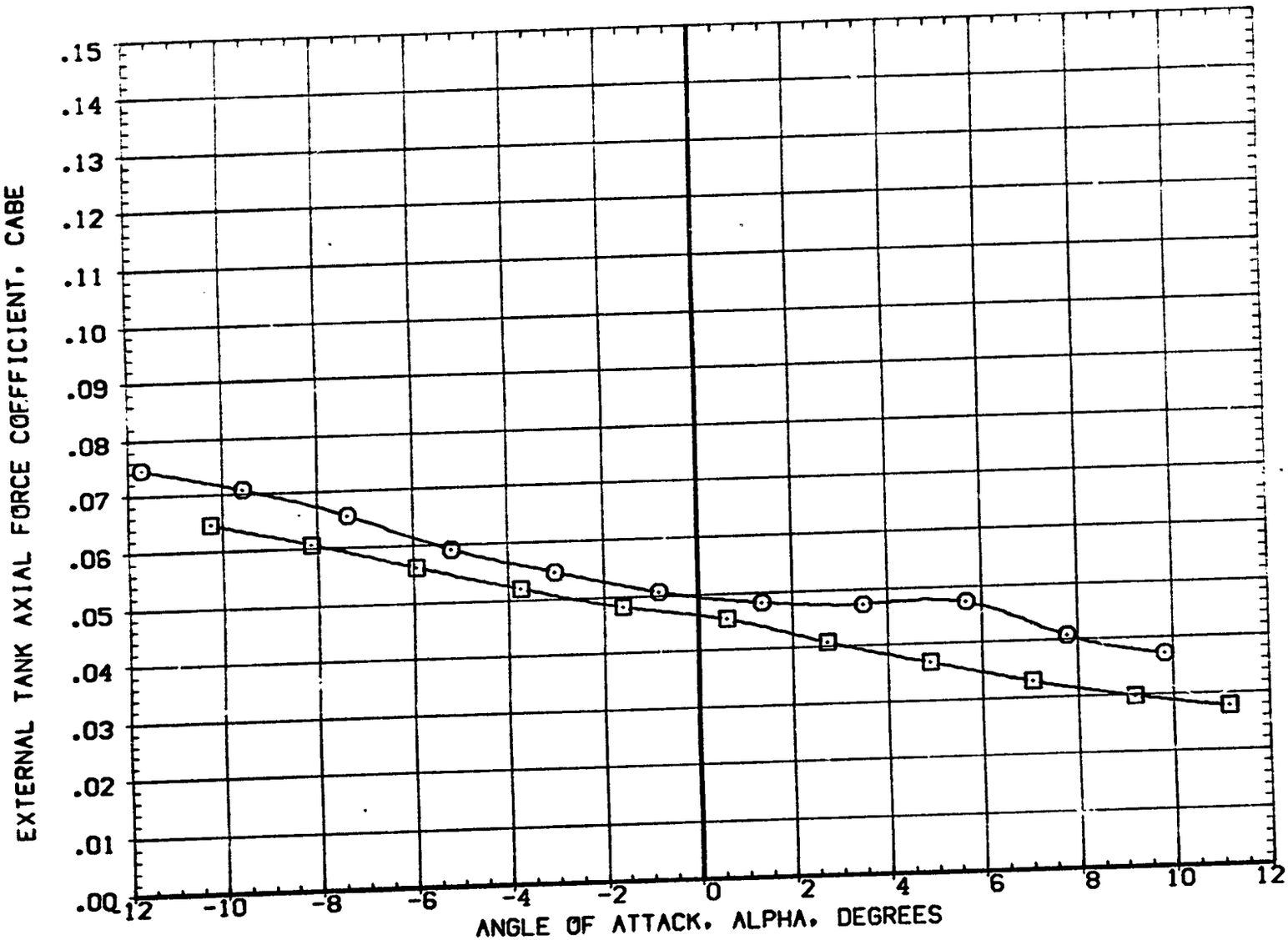
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(89000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(89020)	□	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



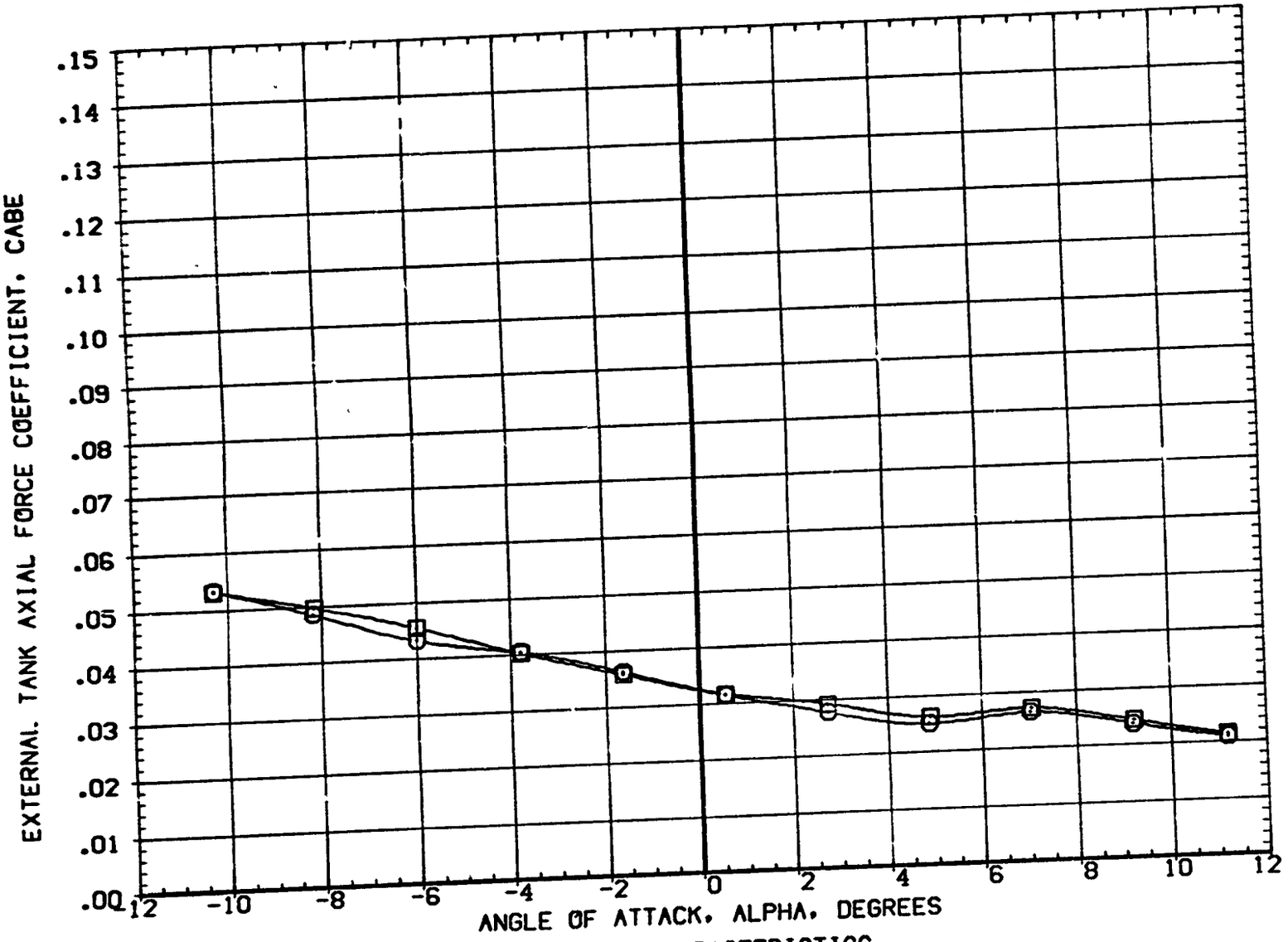
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



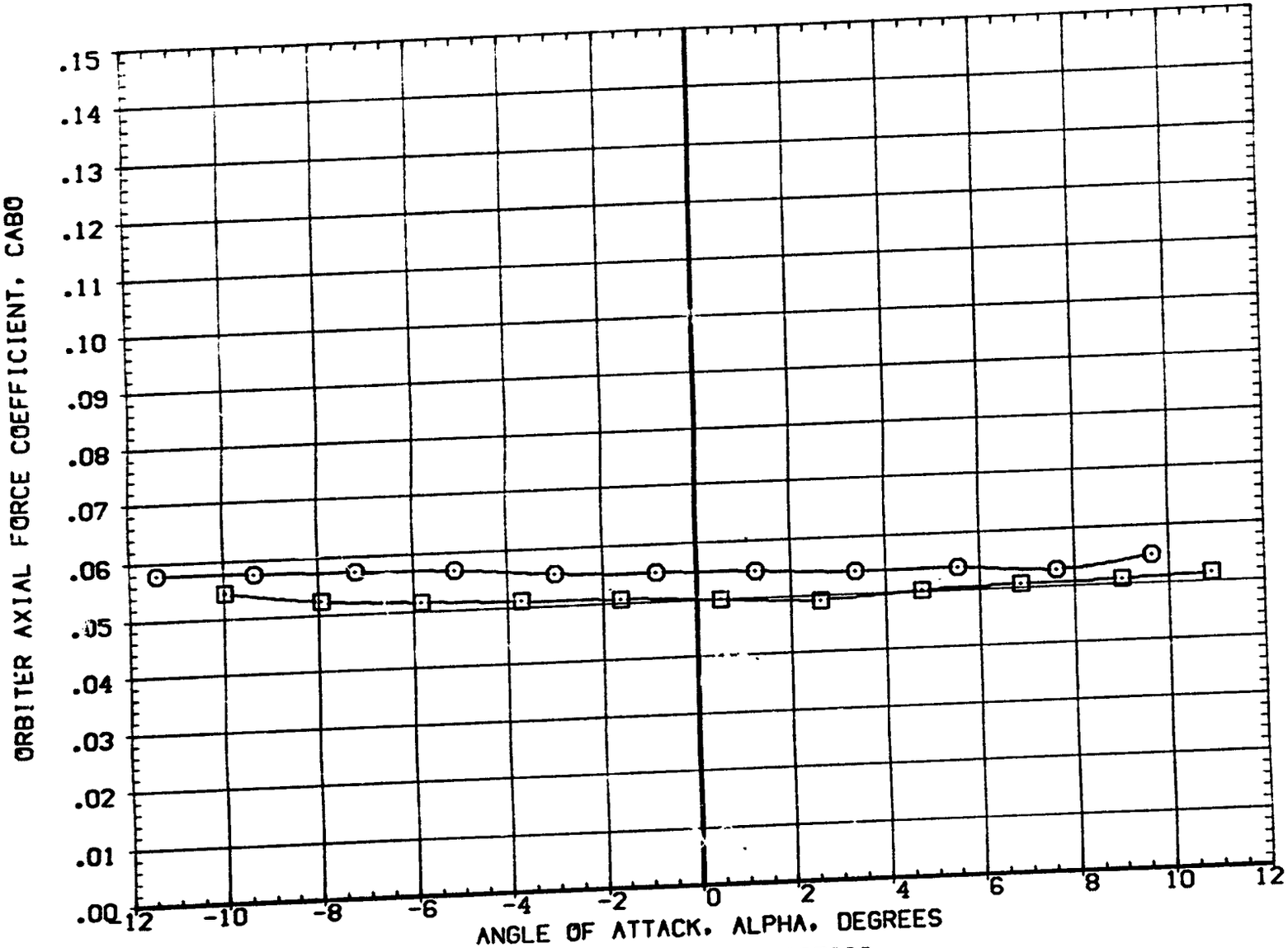
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(IA31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



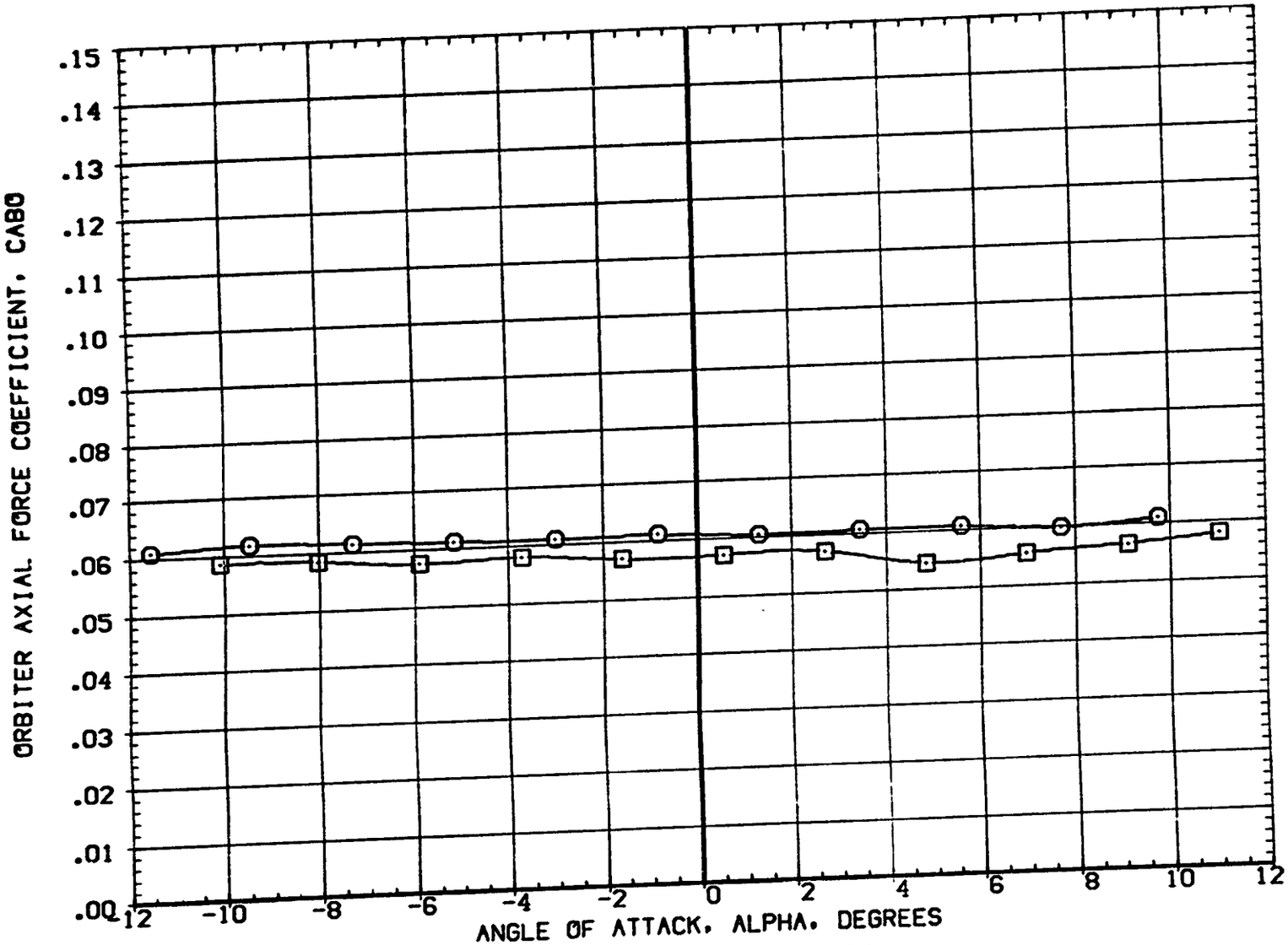
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC S73(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC S73(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



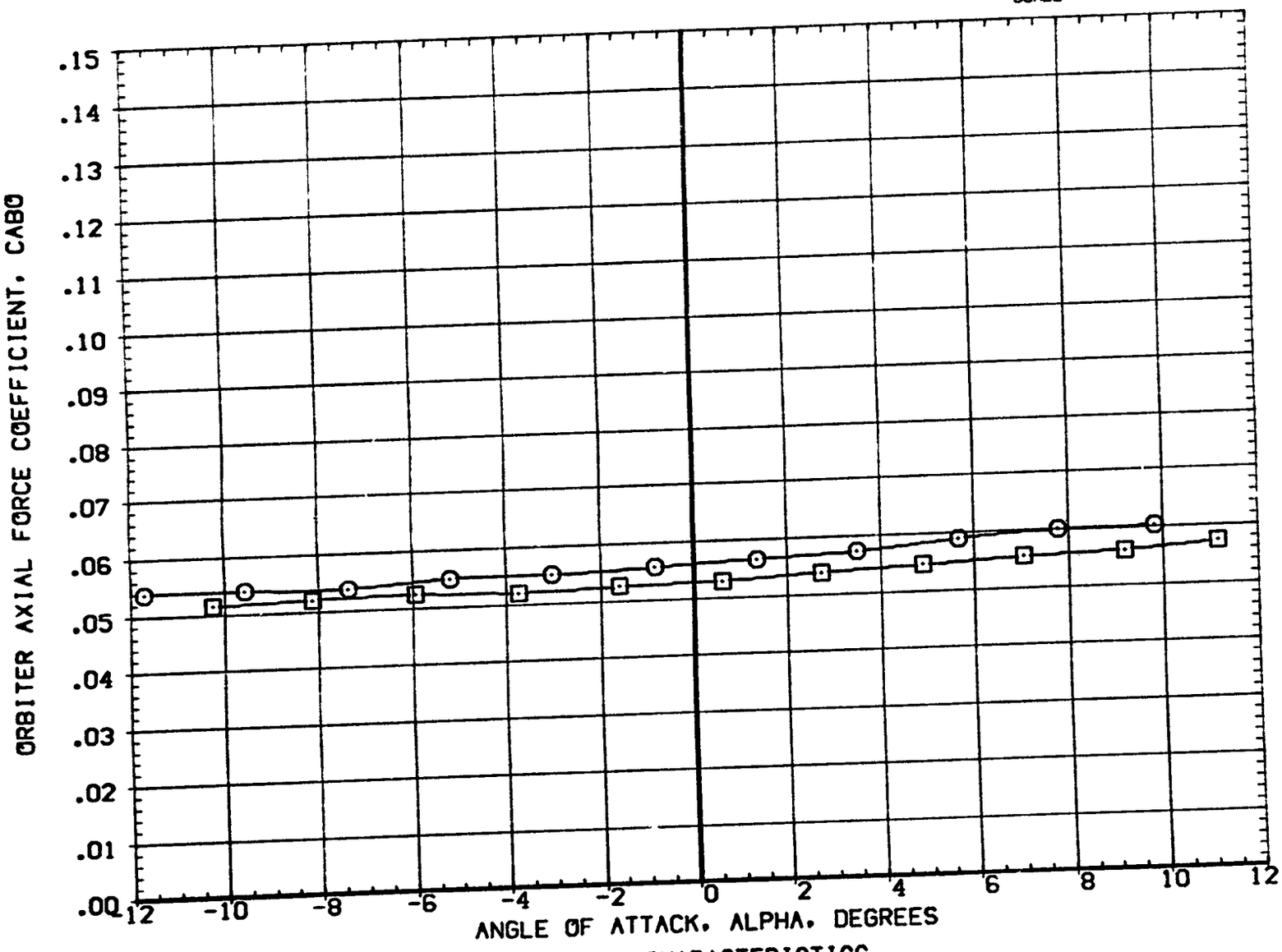
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



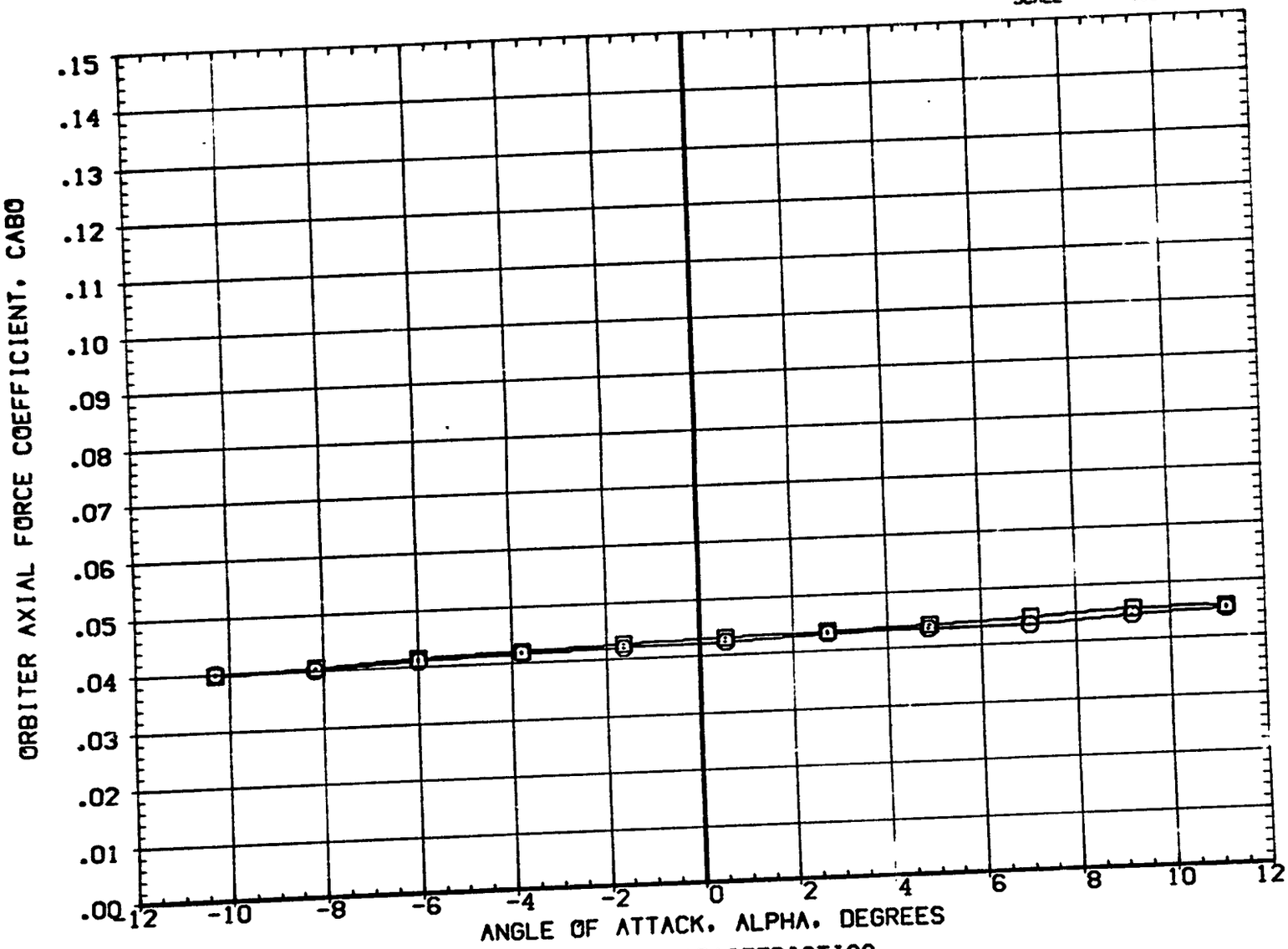
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000)	MSFC 573(1A? -C) (03)(T9)(S3)	.500	.140	
(890201)	MSFC 573(1A -C) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



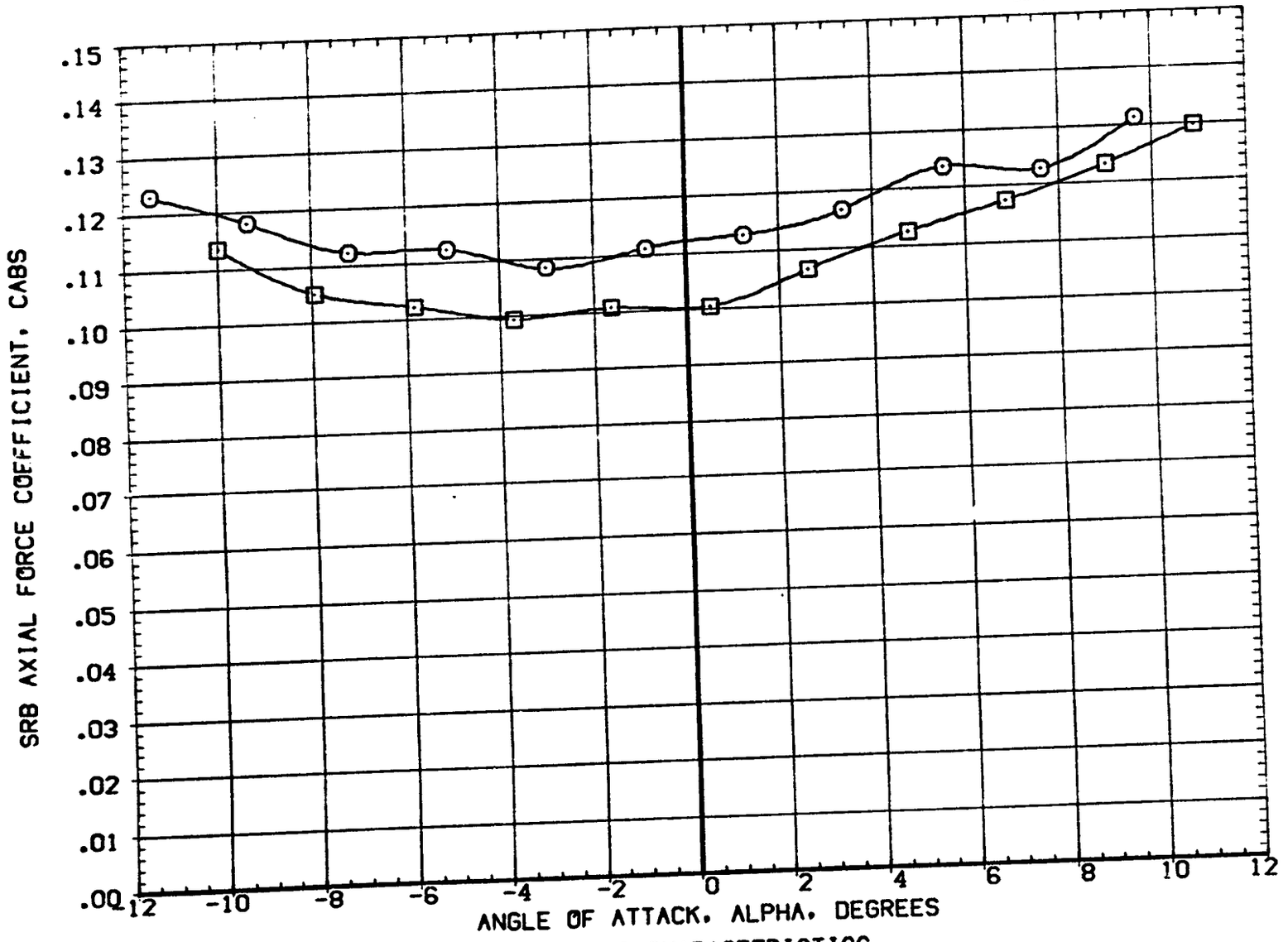
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



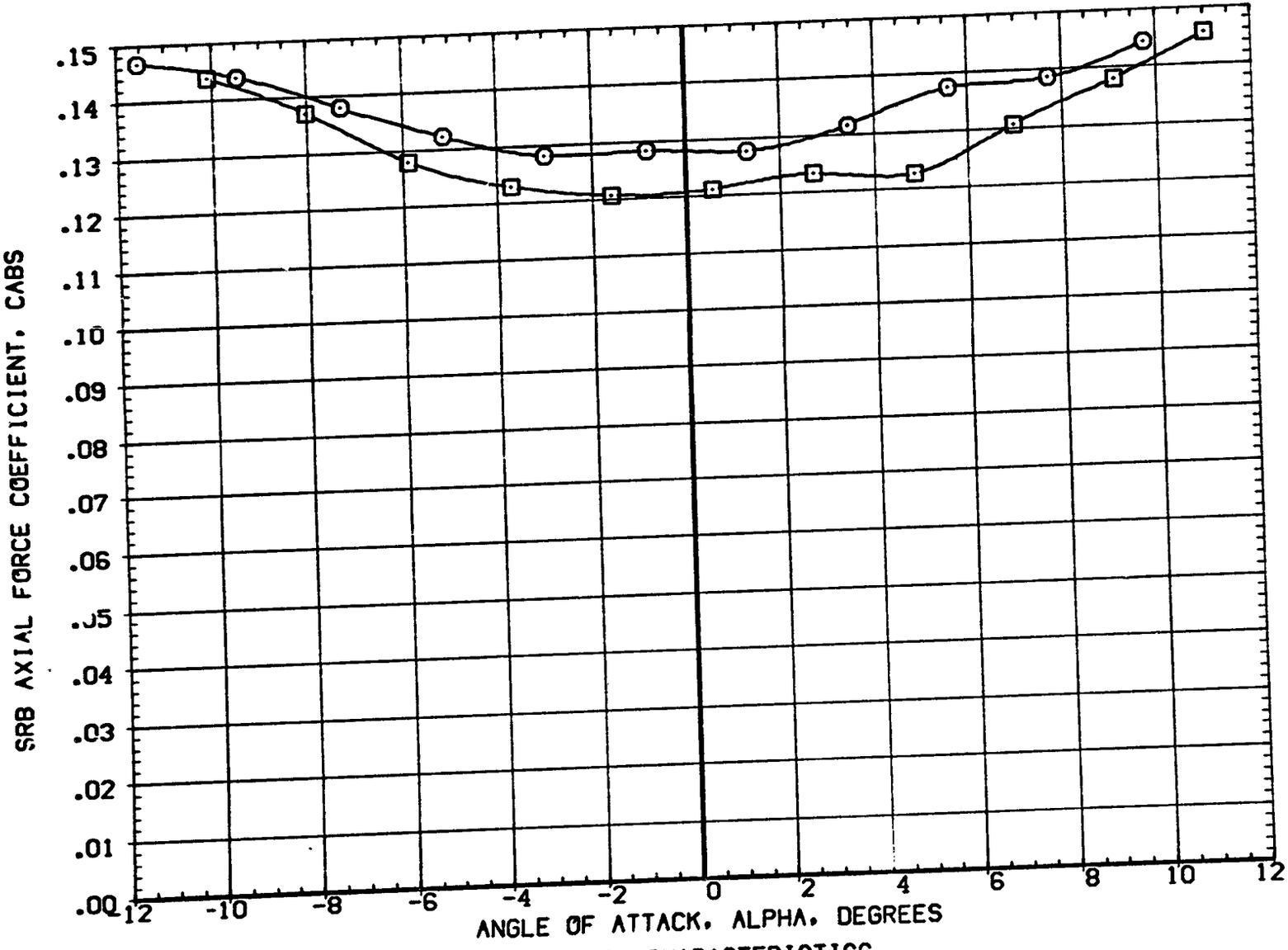
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



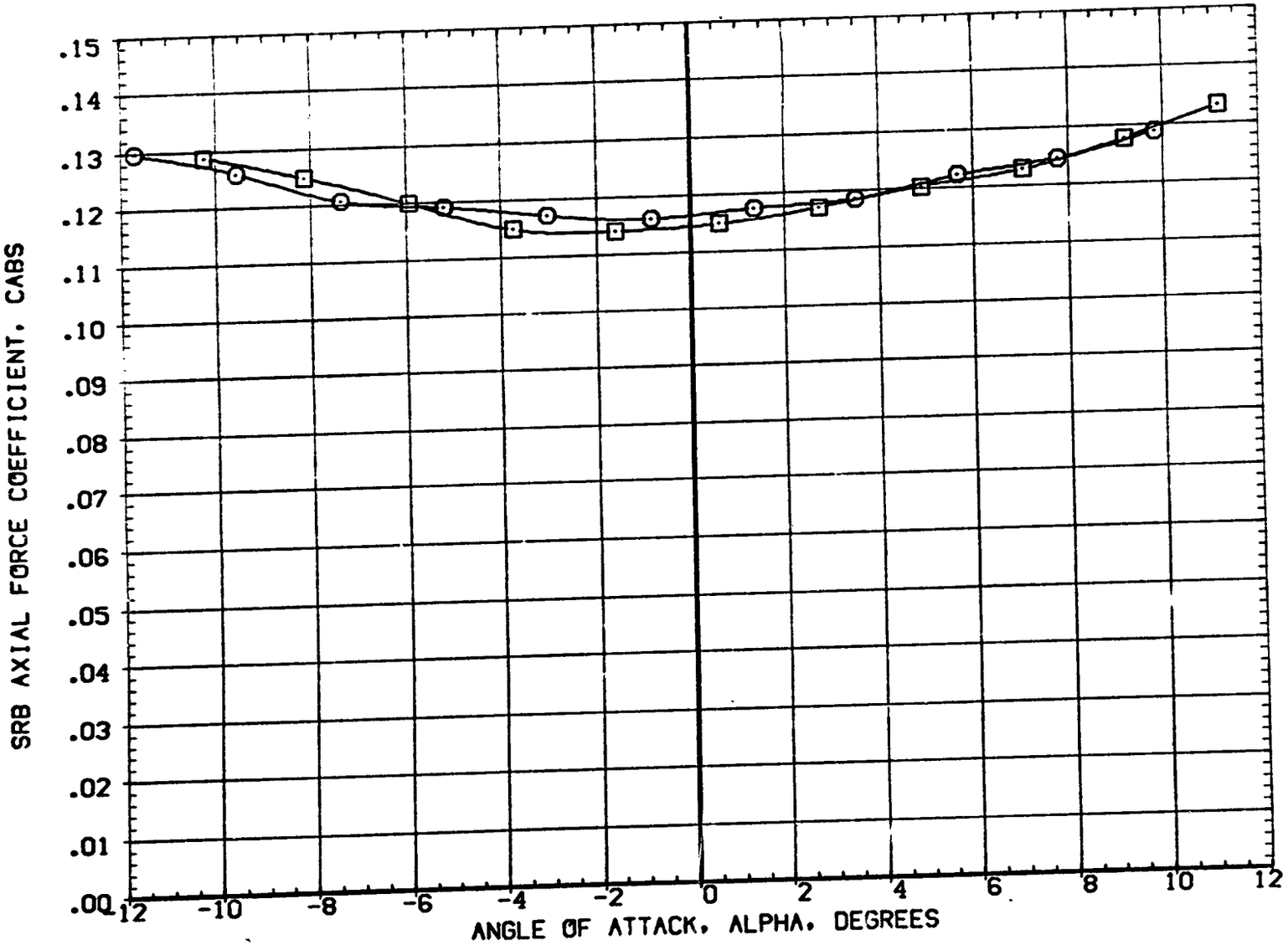
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(990000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890201) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



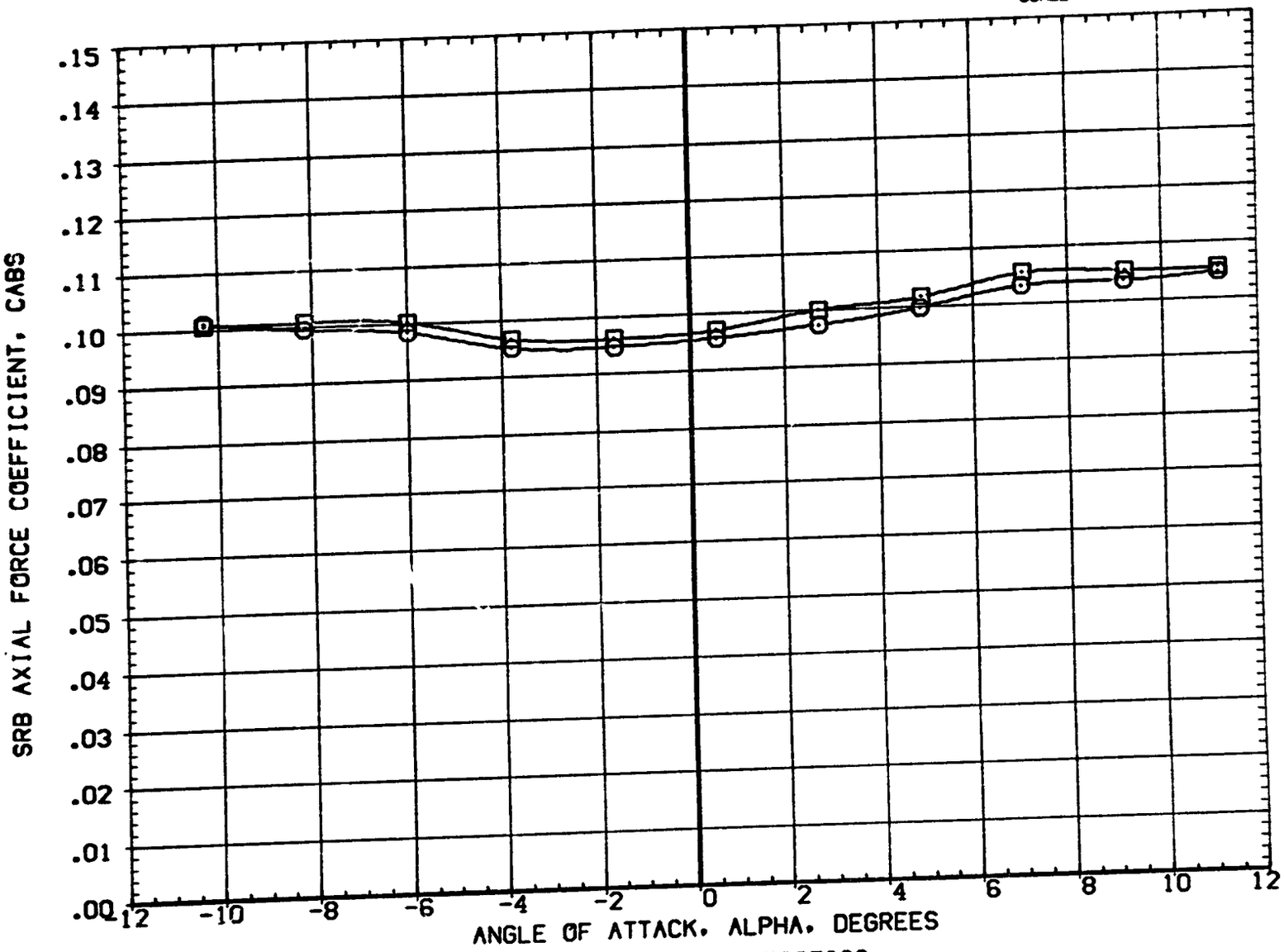
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAV
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0040	IN.
SCALE		



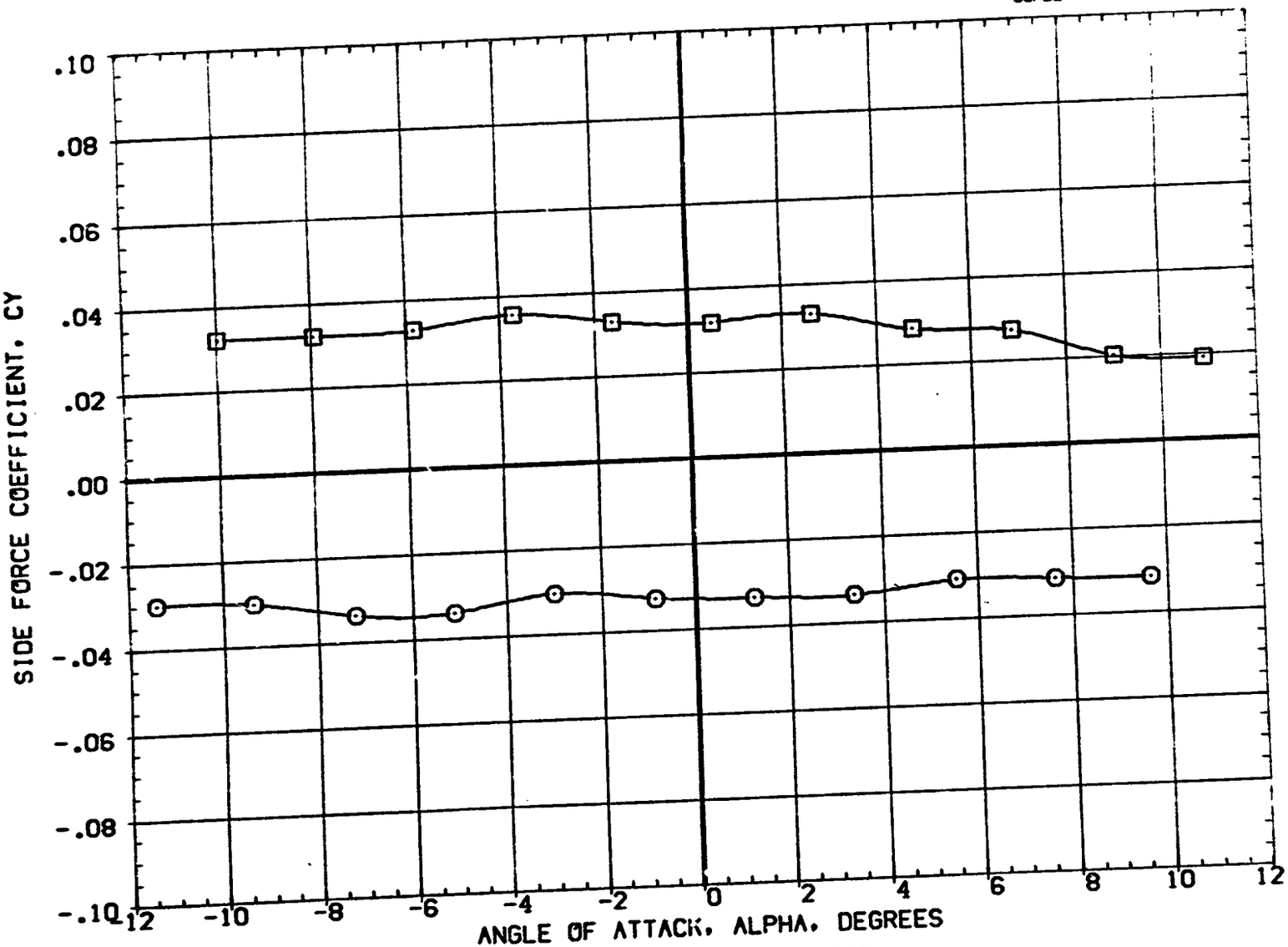
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



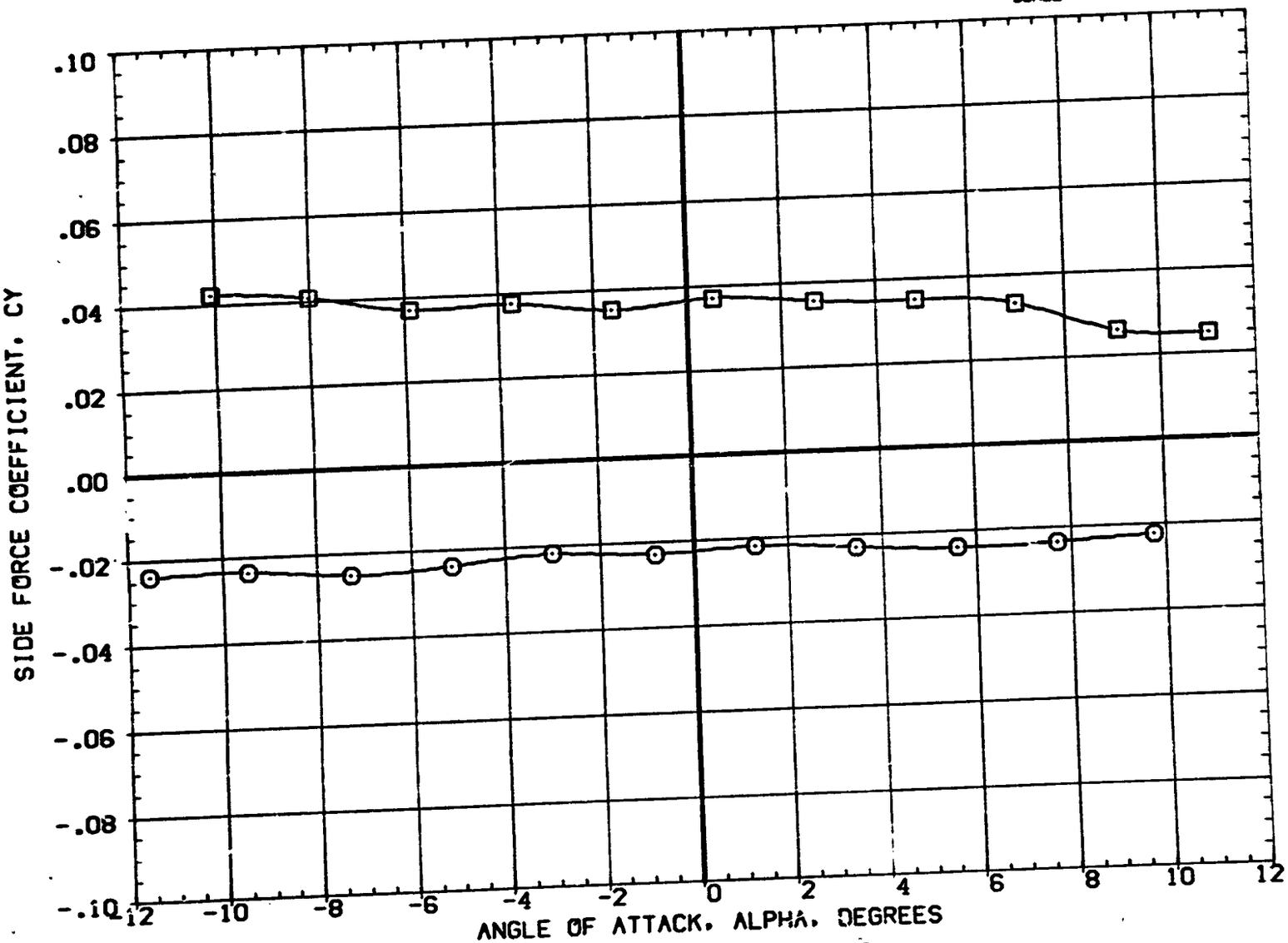
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



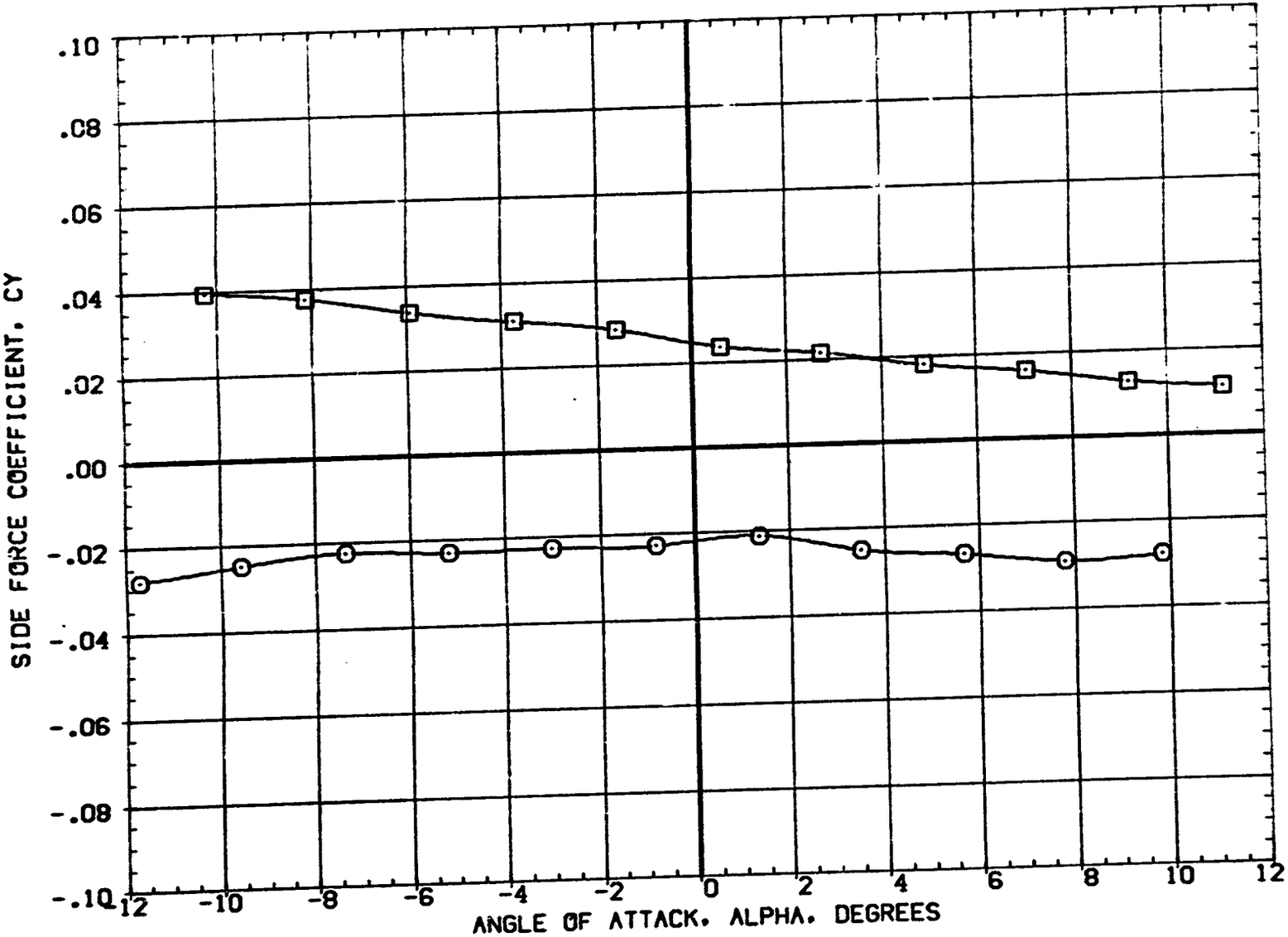
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



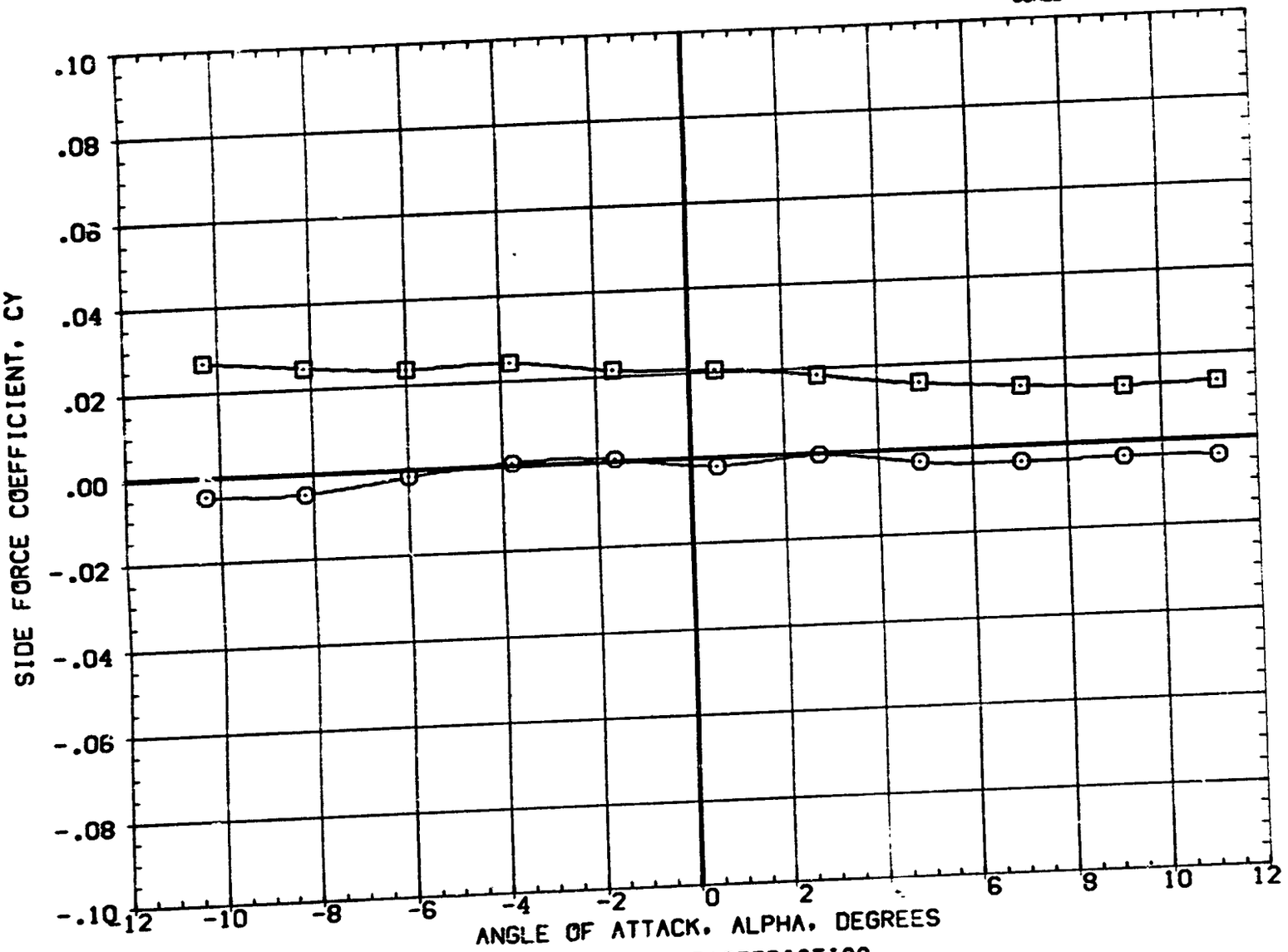
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	1.000
(B90201) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



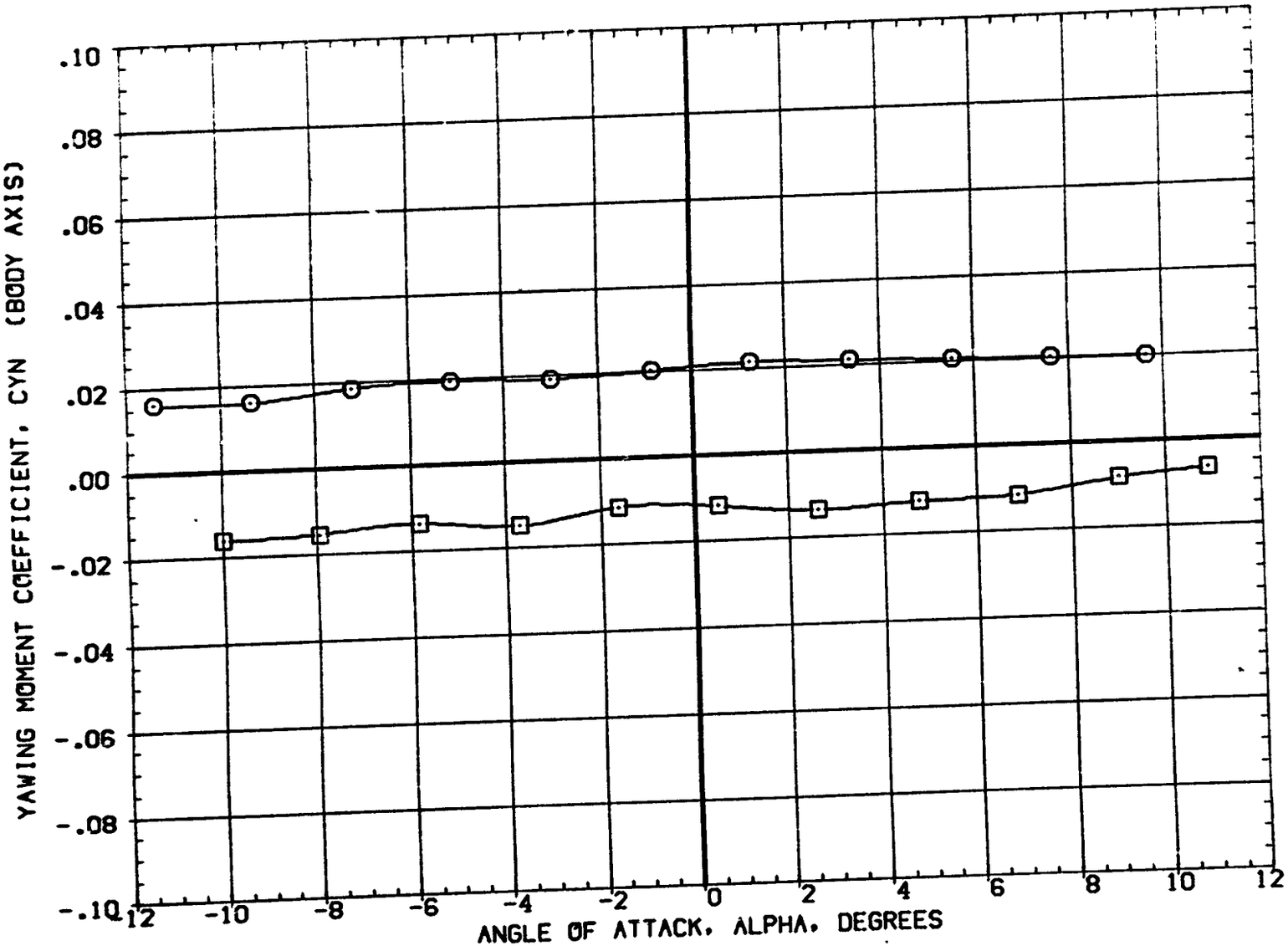
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



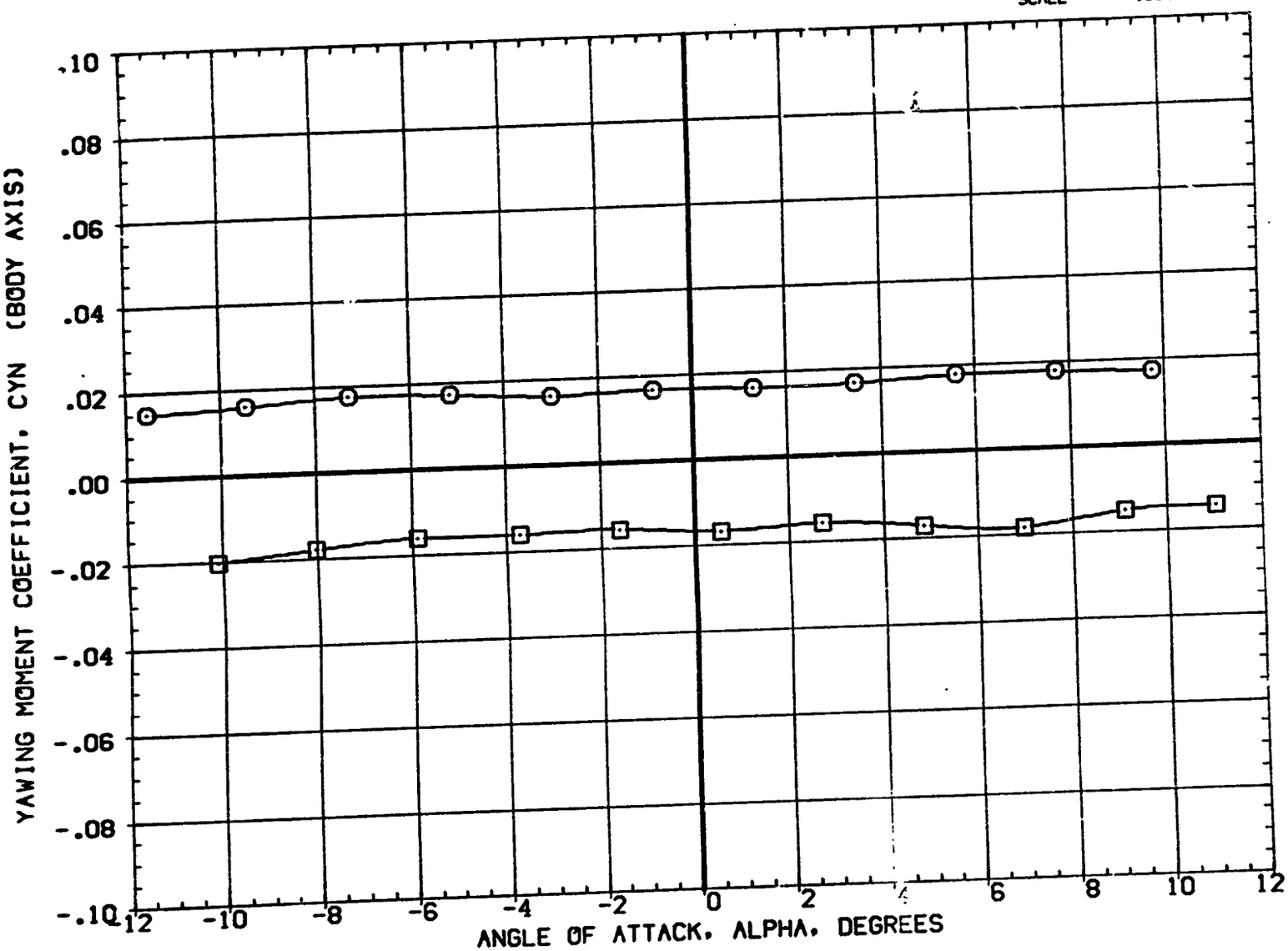
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



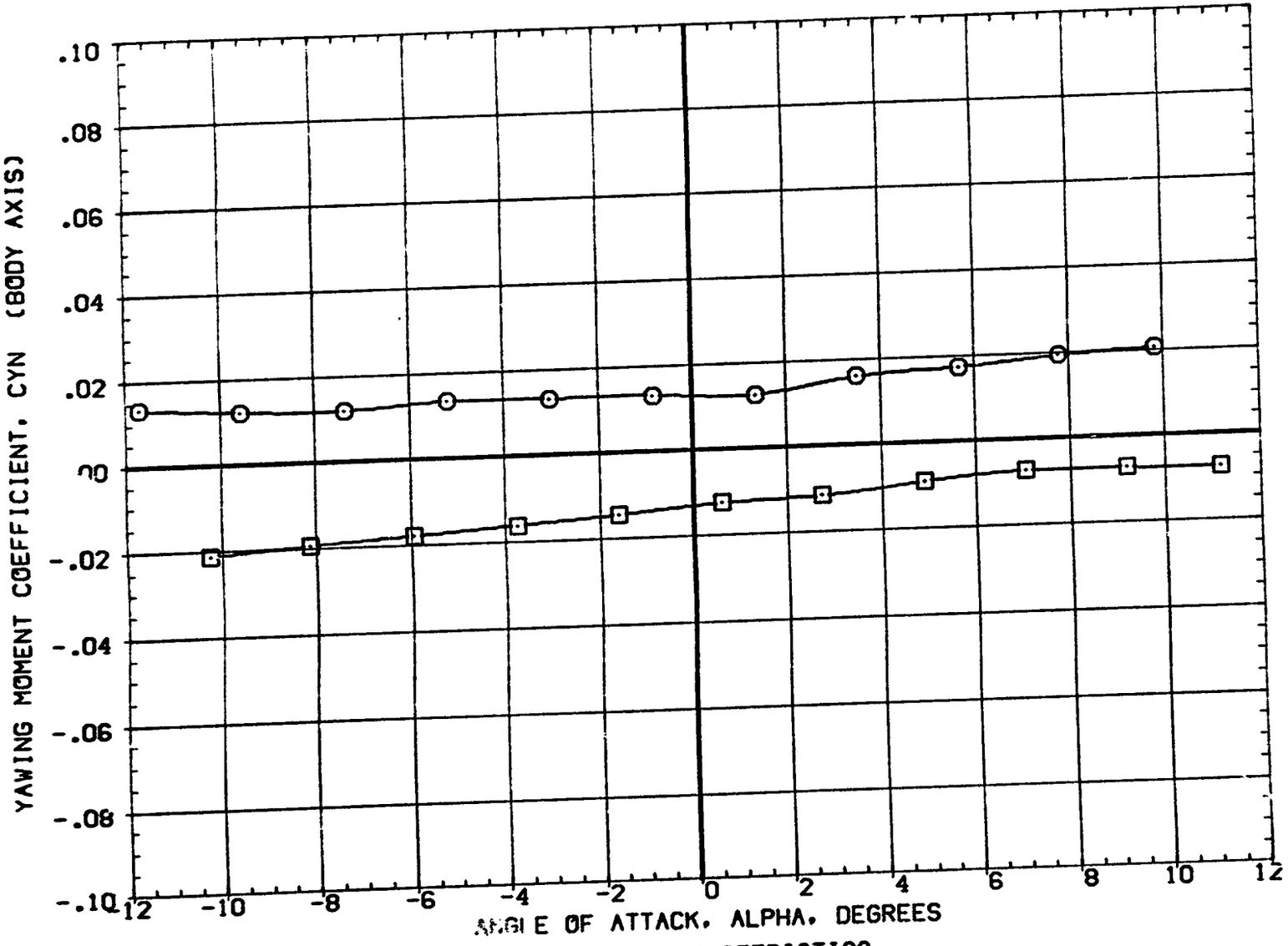
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(89020!) □	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



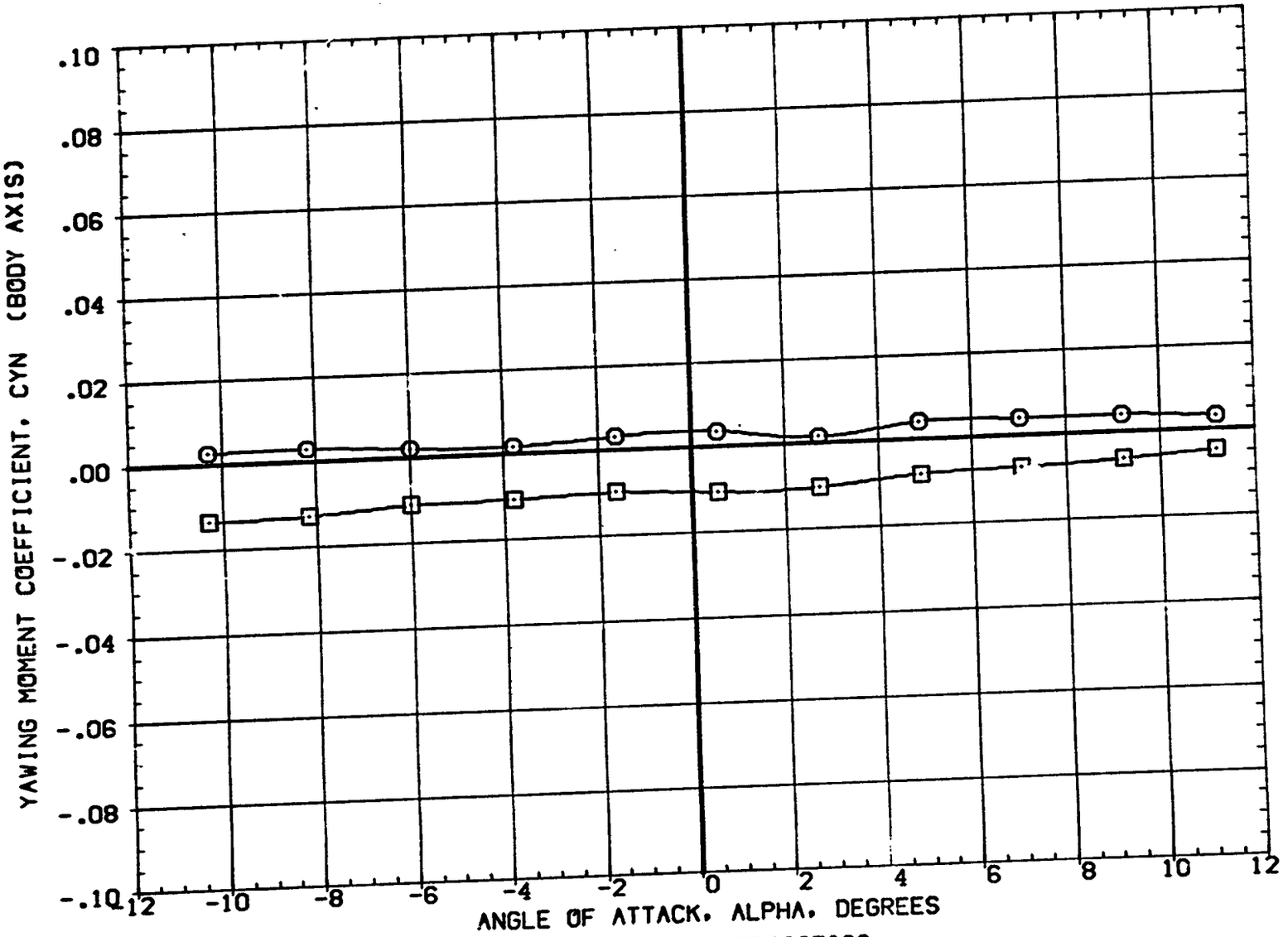
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S2)	.500	.140	
(B90201)	MSFC 573(1A31FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



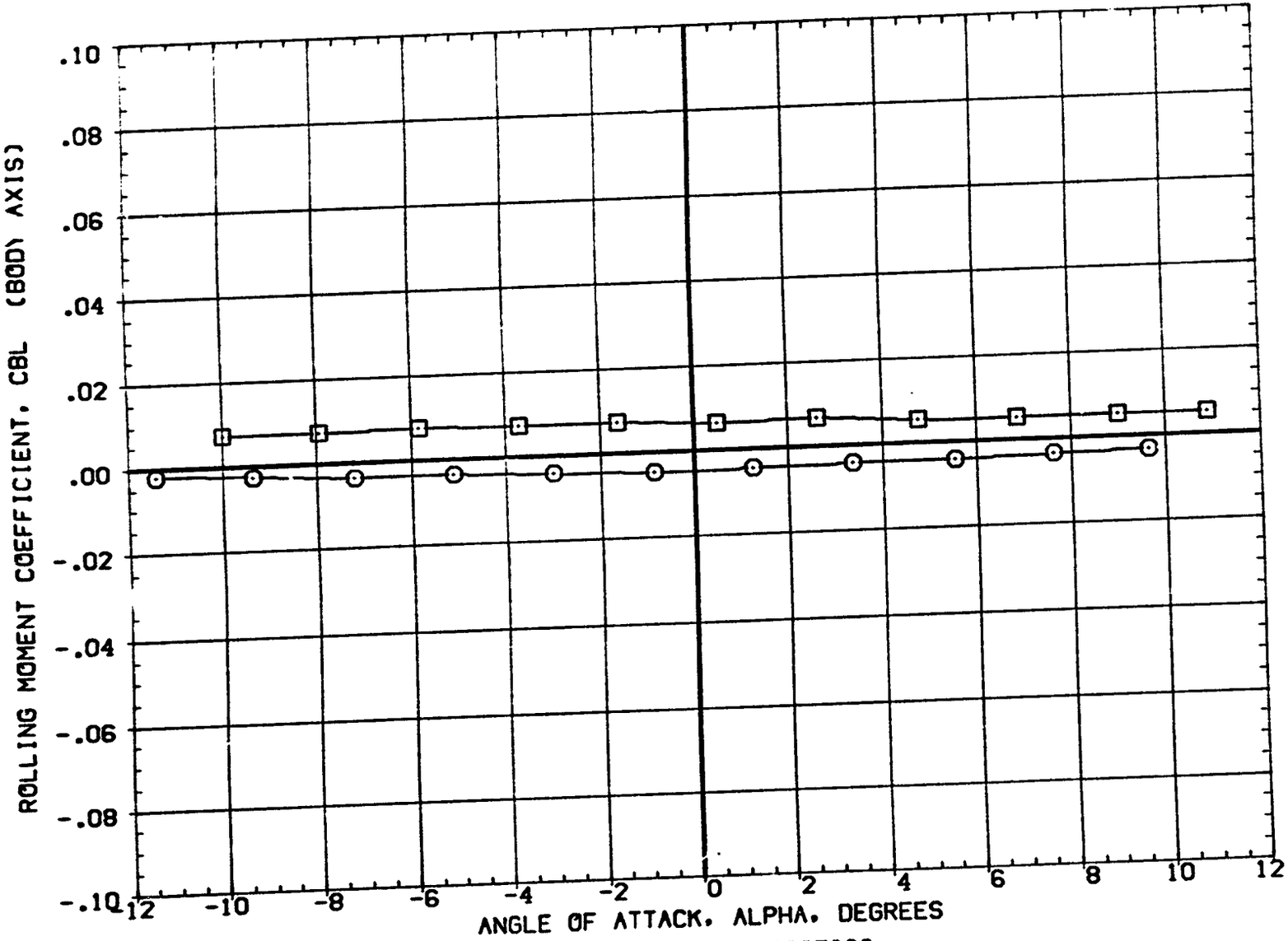
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(89000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(89020)	MSFC 573(1A3IFC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



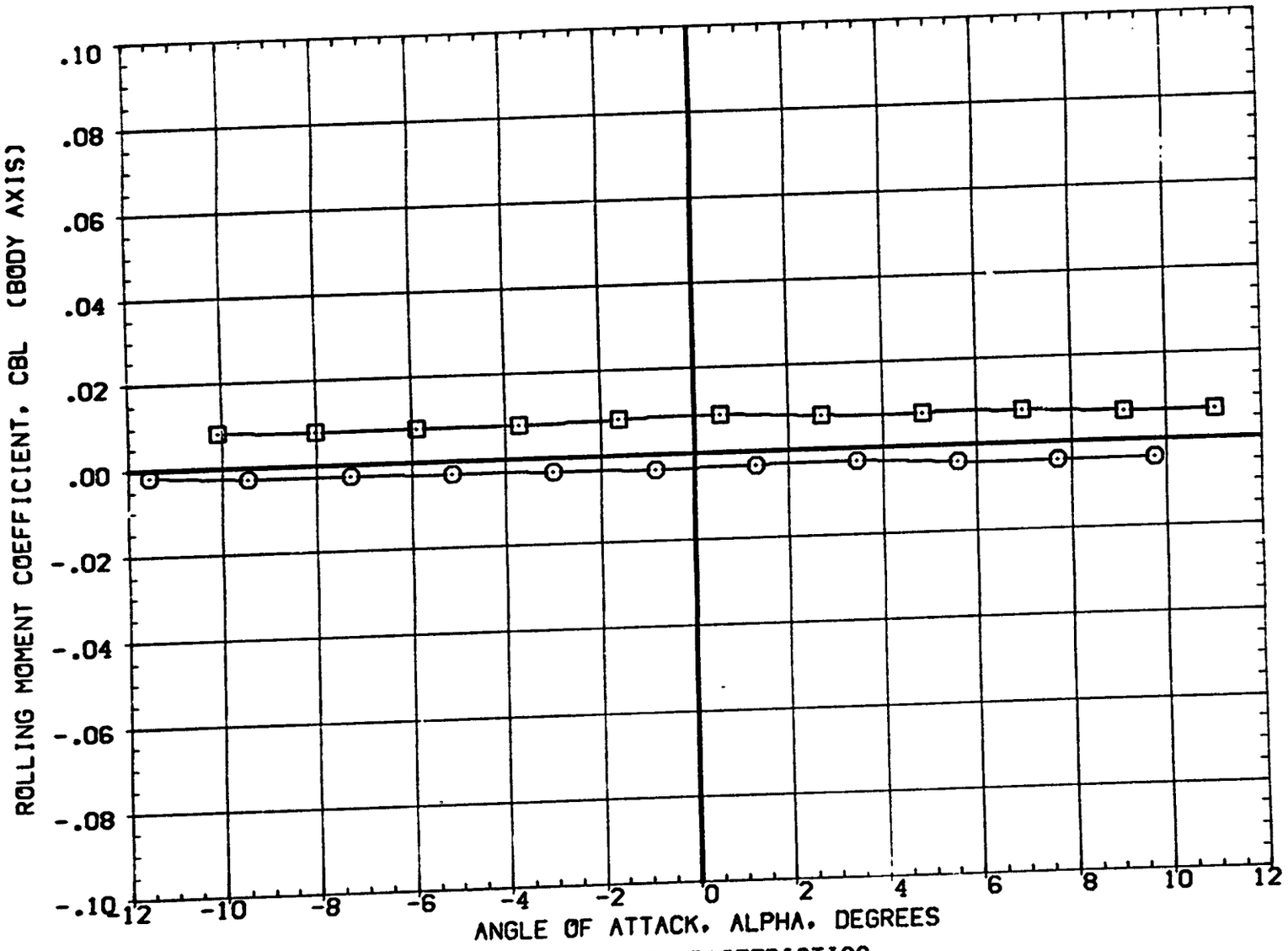
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90201)	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



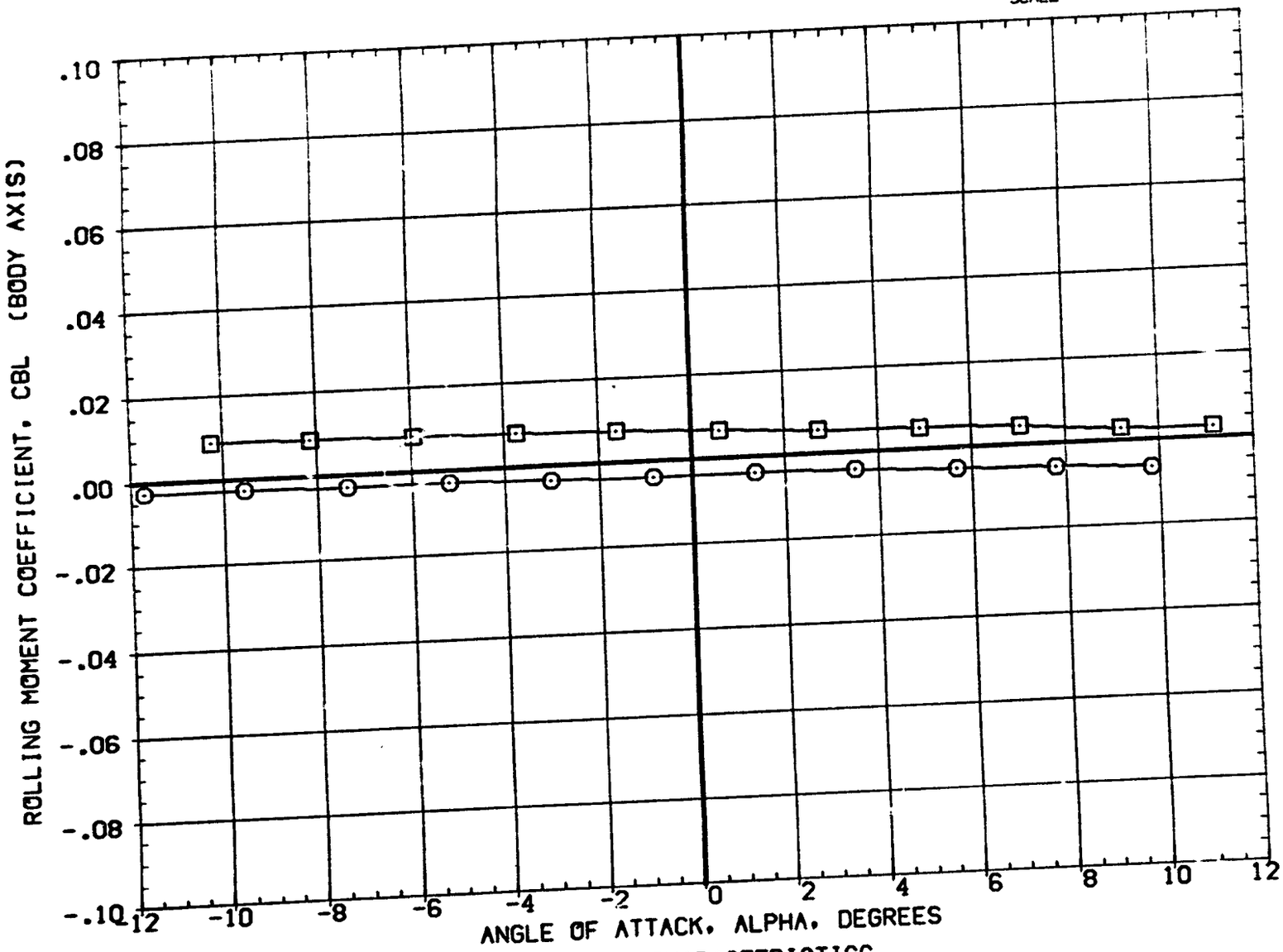
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(B90000) ○	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90201) □	MSFC 573(IA3IFC) (03)(T9)(S3) ORB. MISALNO.	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1950	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



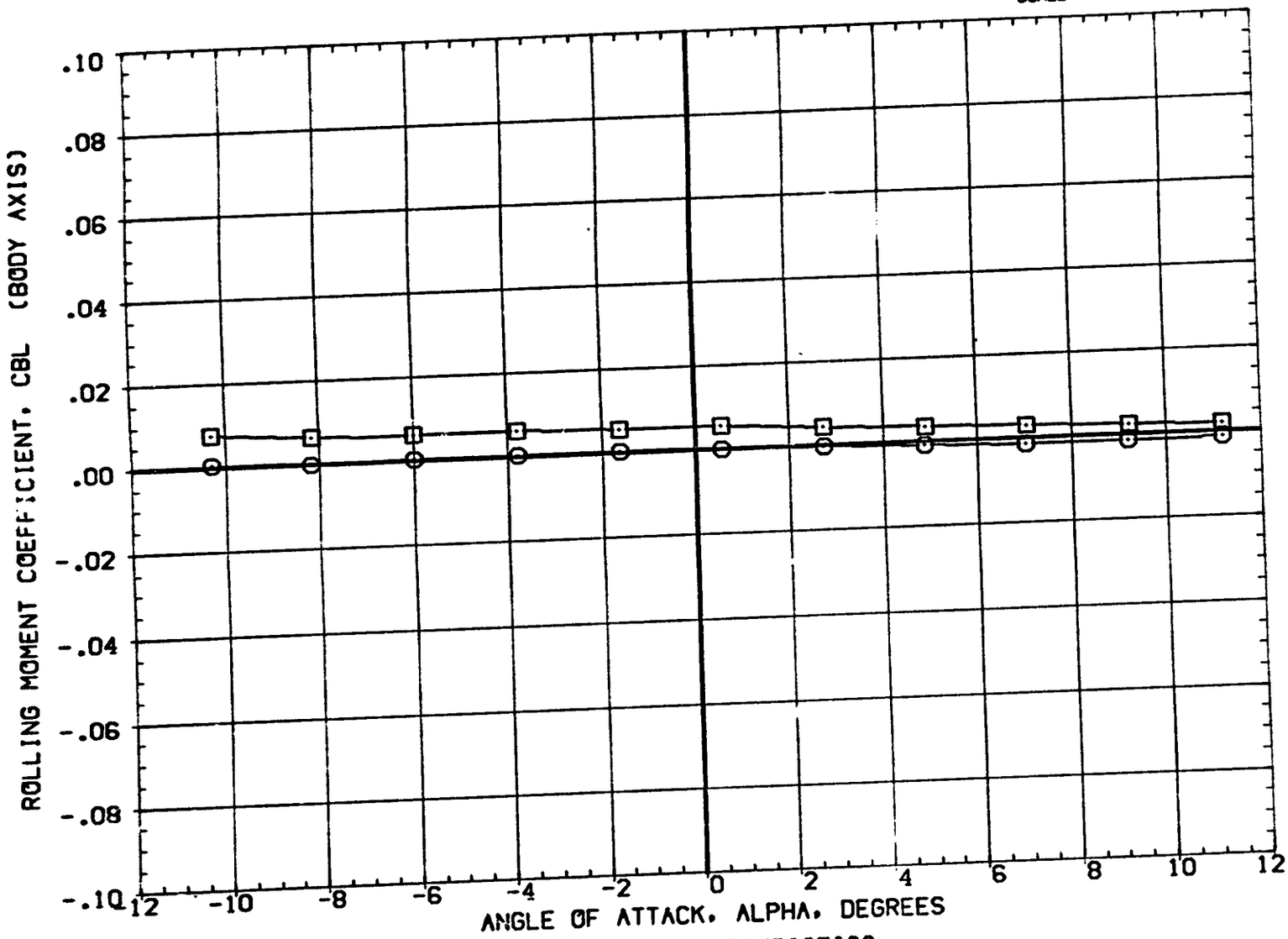
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBYAW
(890000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890201)	□	MSFC 573(1A3)FC) (03)(T9)(S3) ORB. MISALND	.500	.140	1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



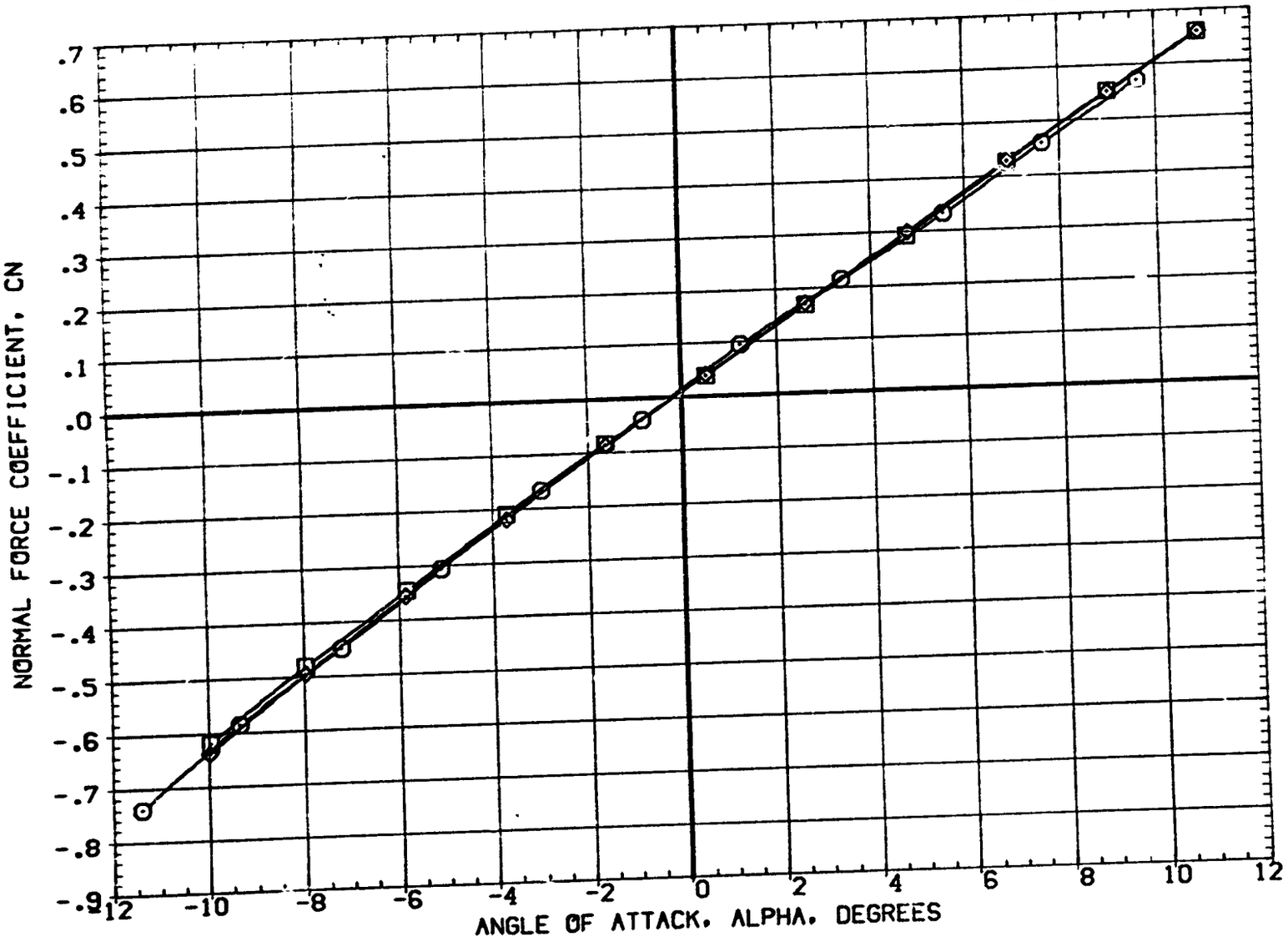
EFFECT OF ORBITER YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



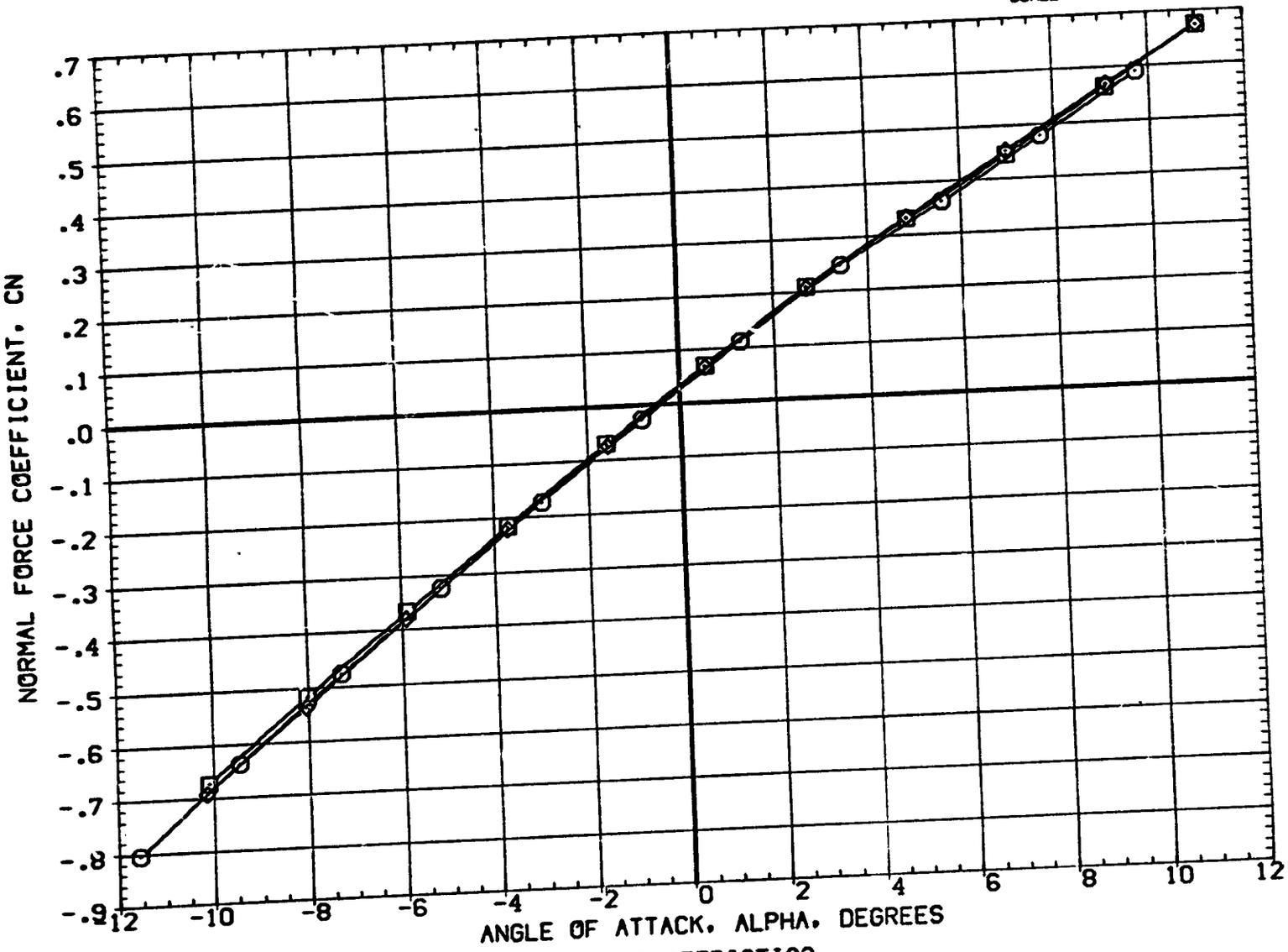
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



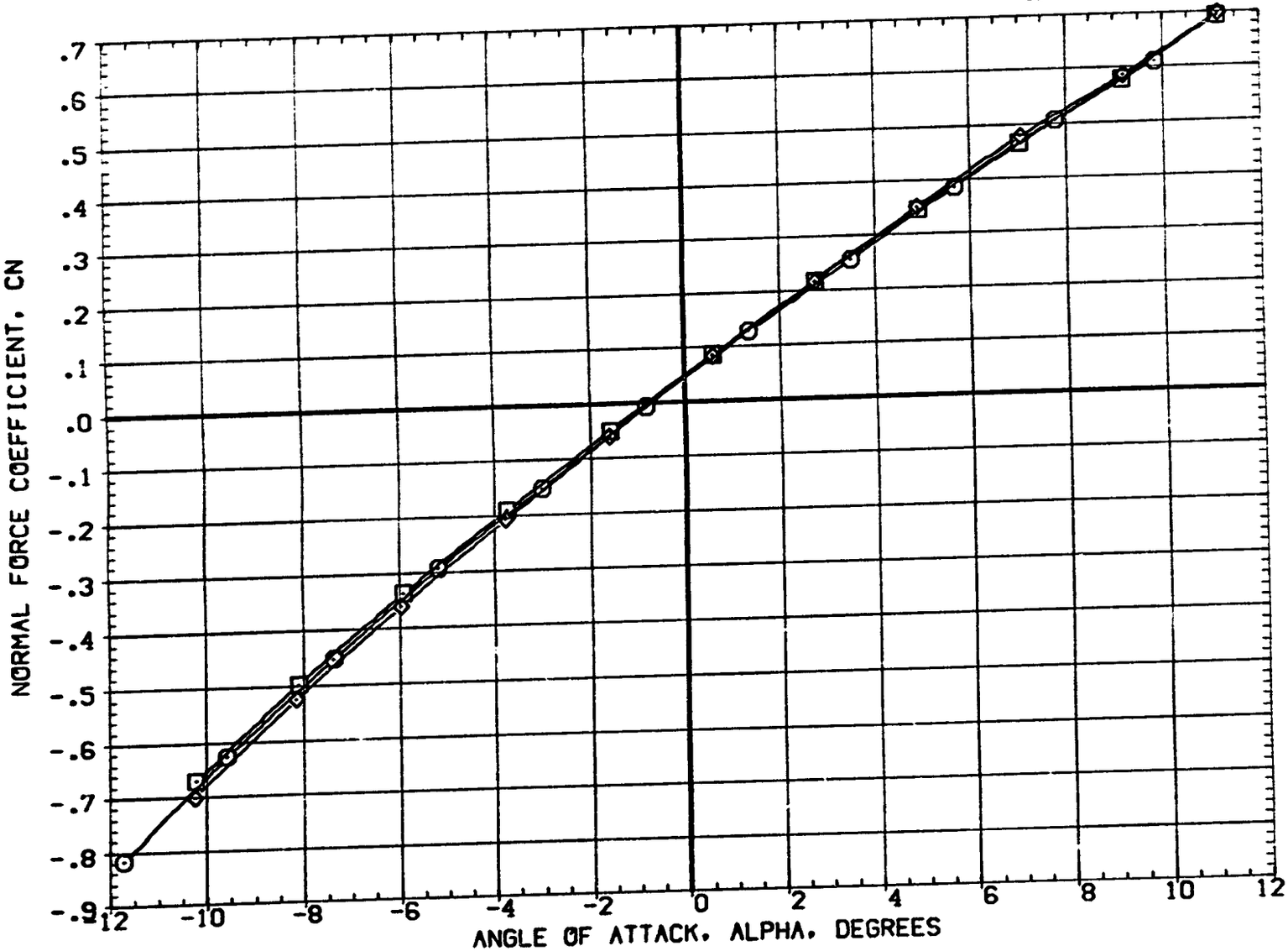
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC S73(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC S73(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC S73(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

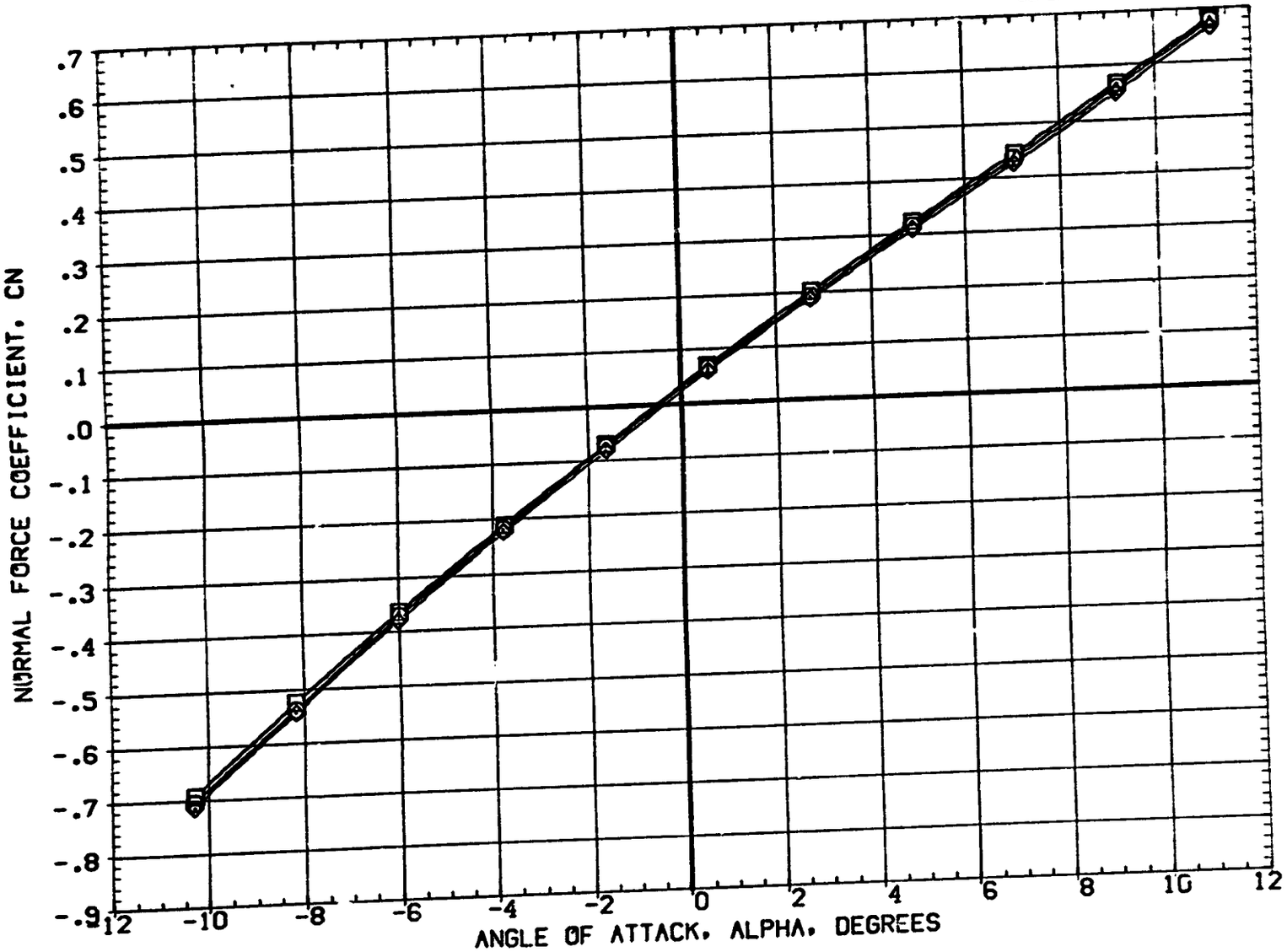


EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SSBYAV
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



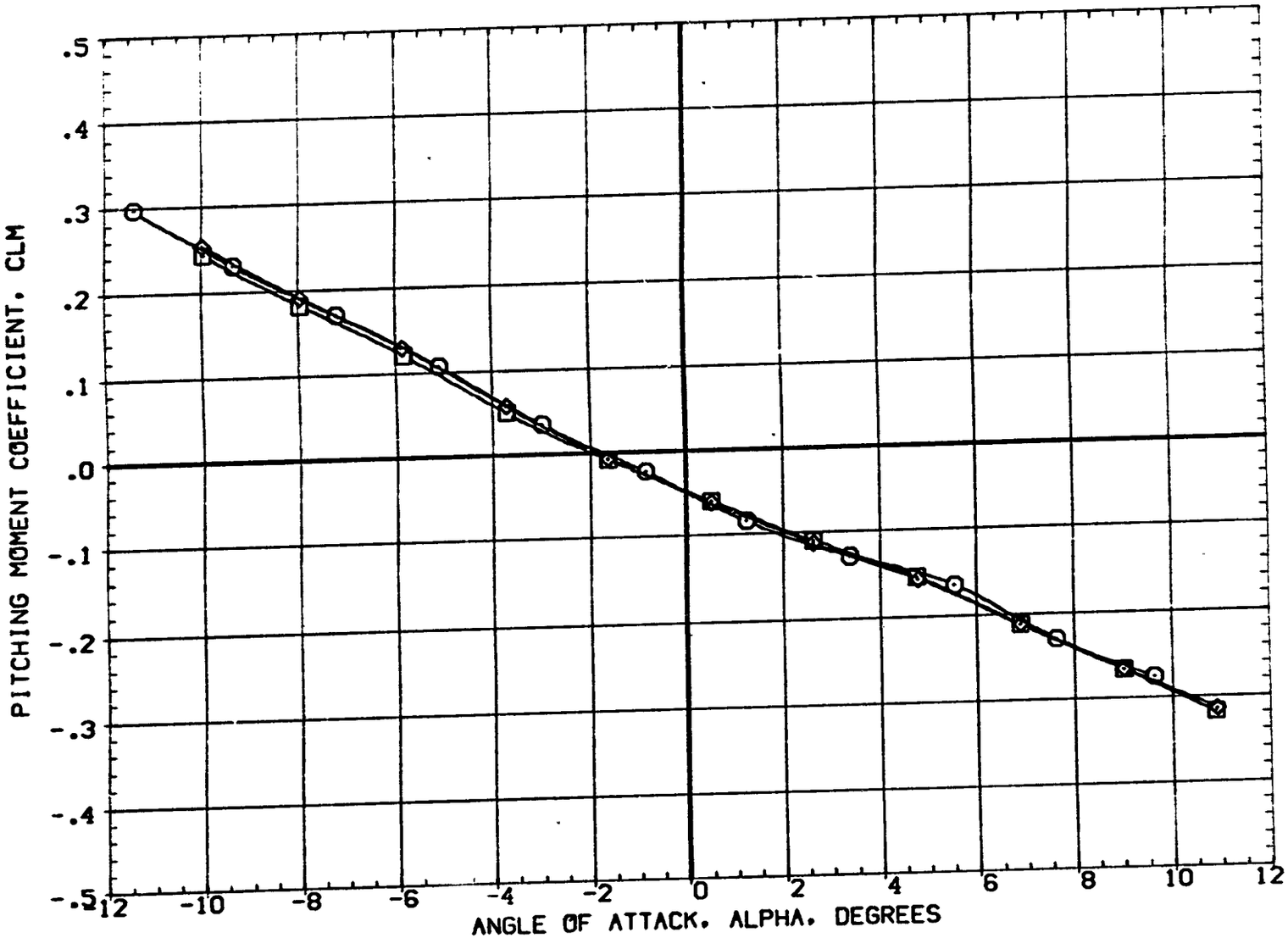
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000) □	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(89030:) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



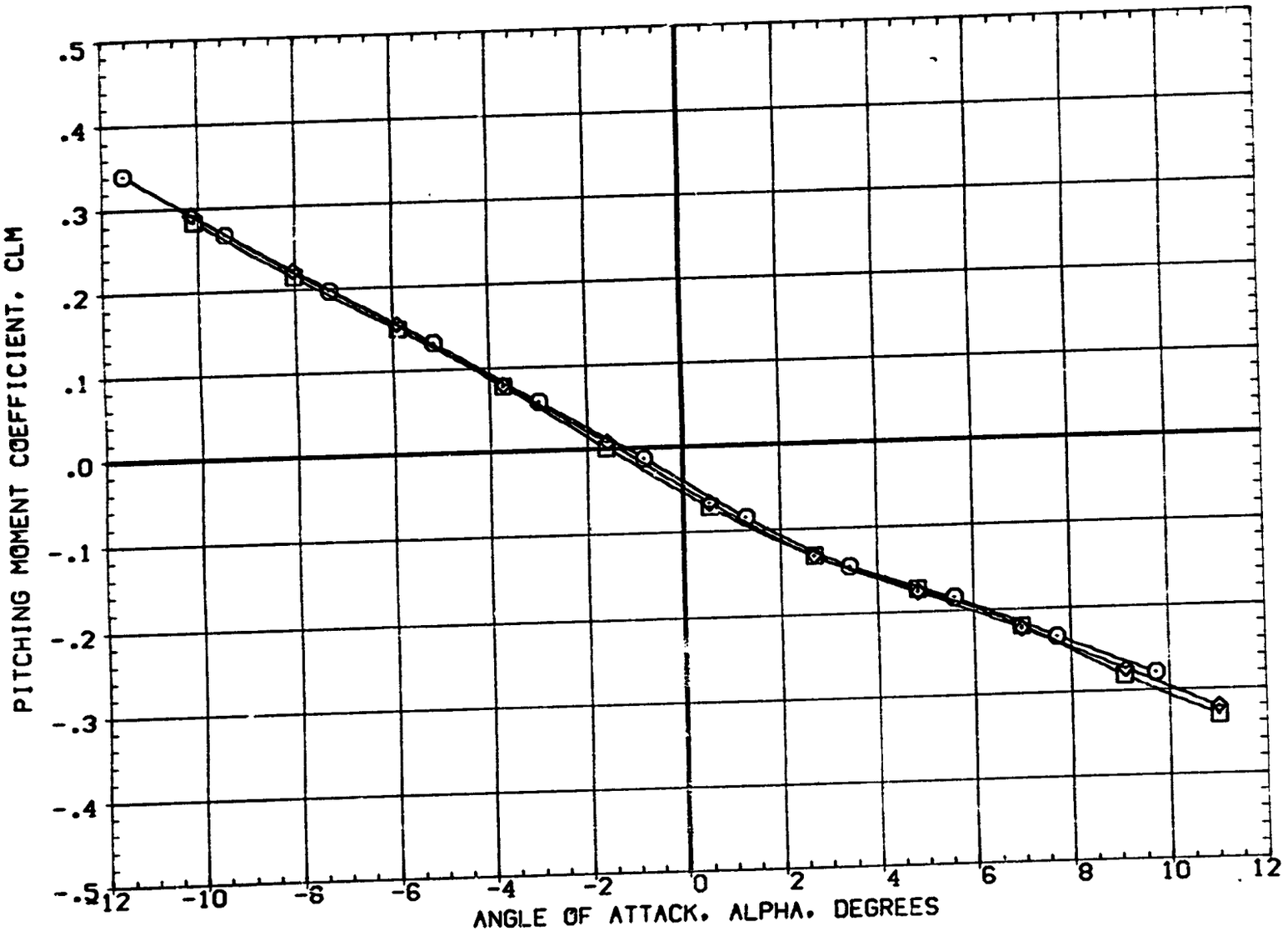
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	◇	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



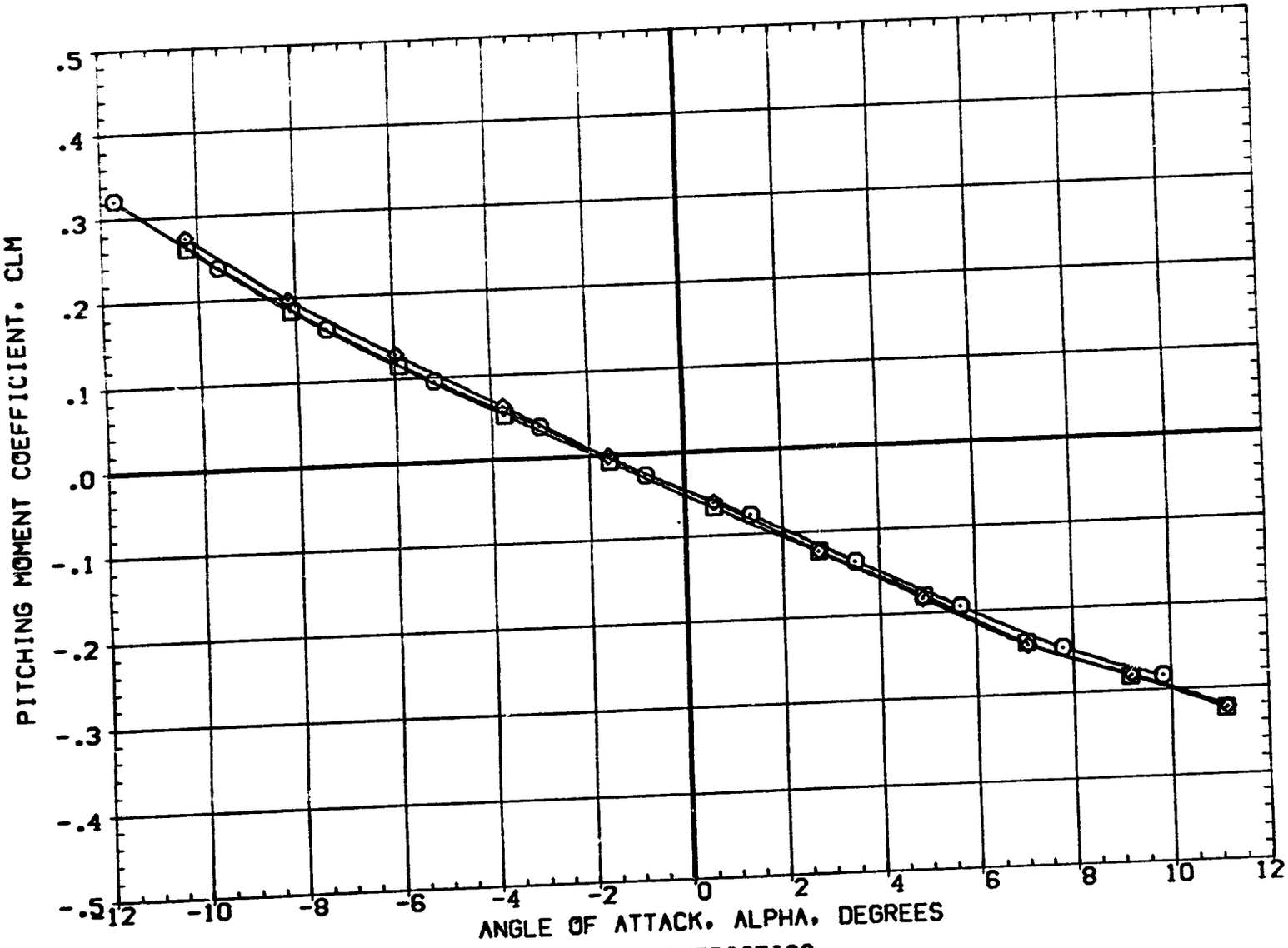
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90360)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



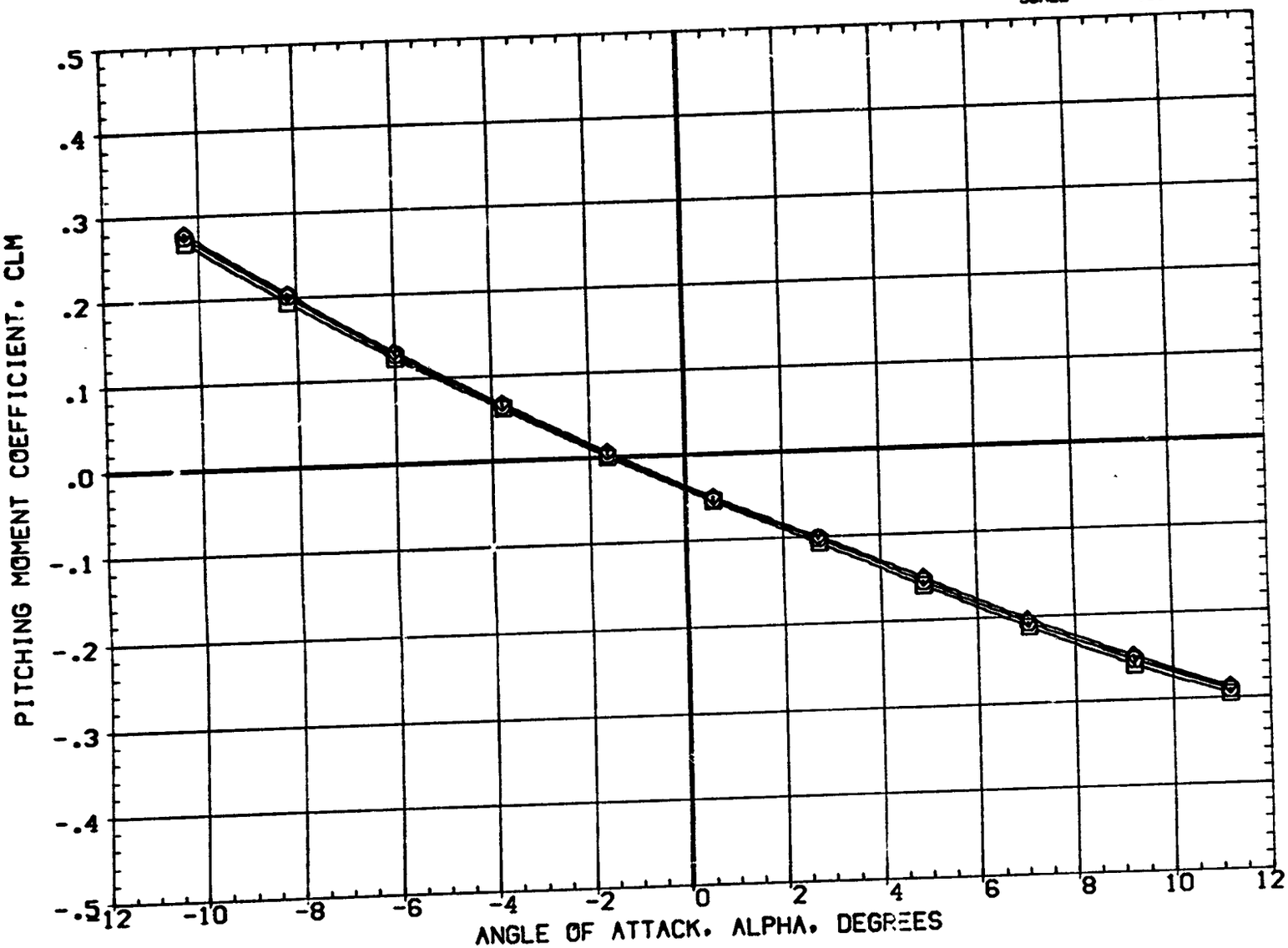
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



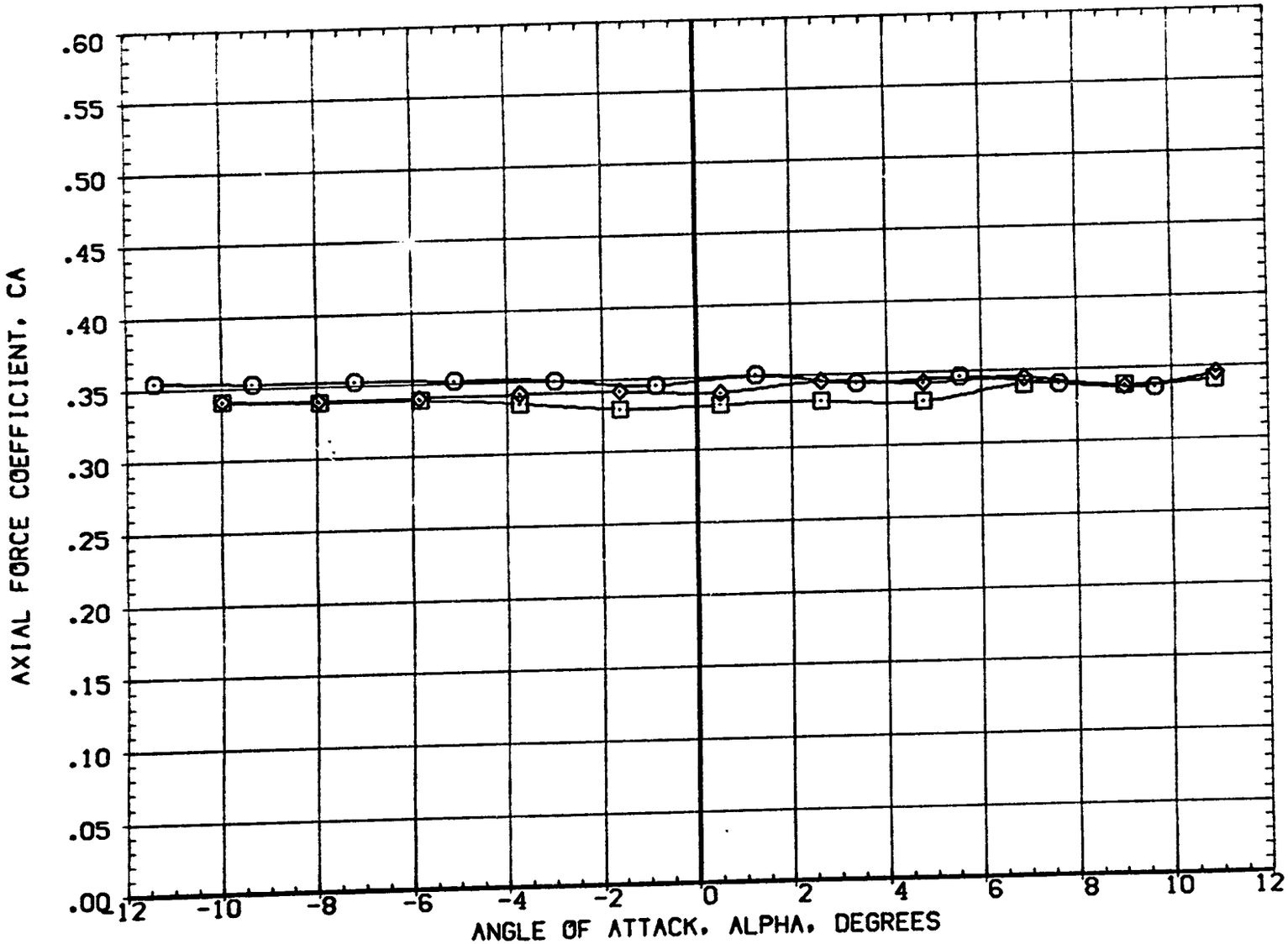
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(890300)	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890301)	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



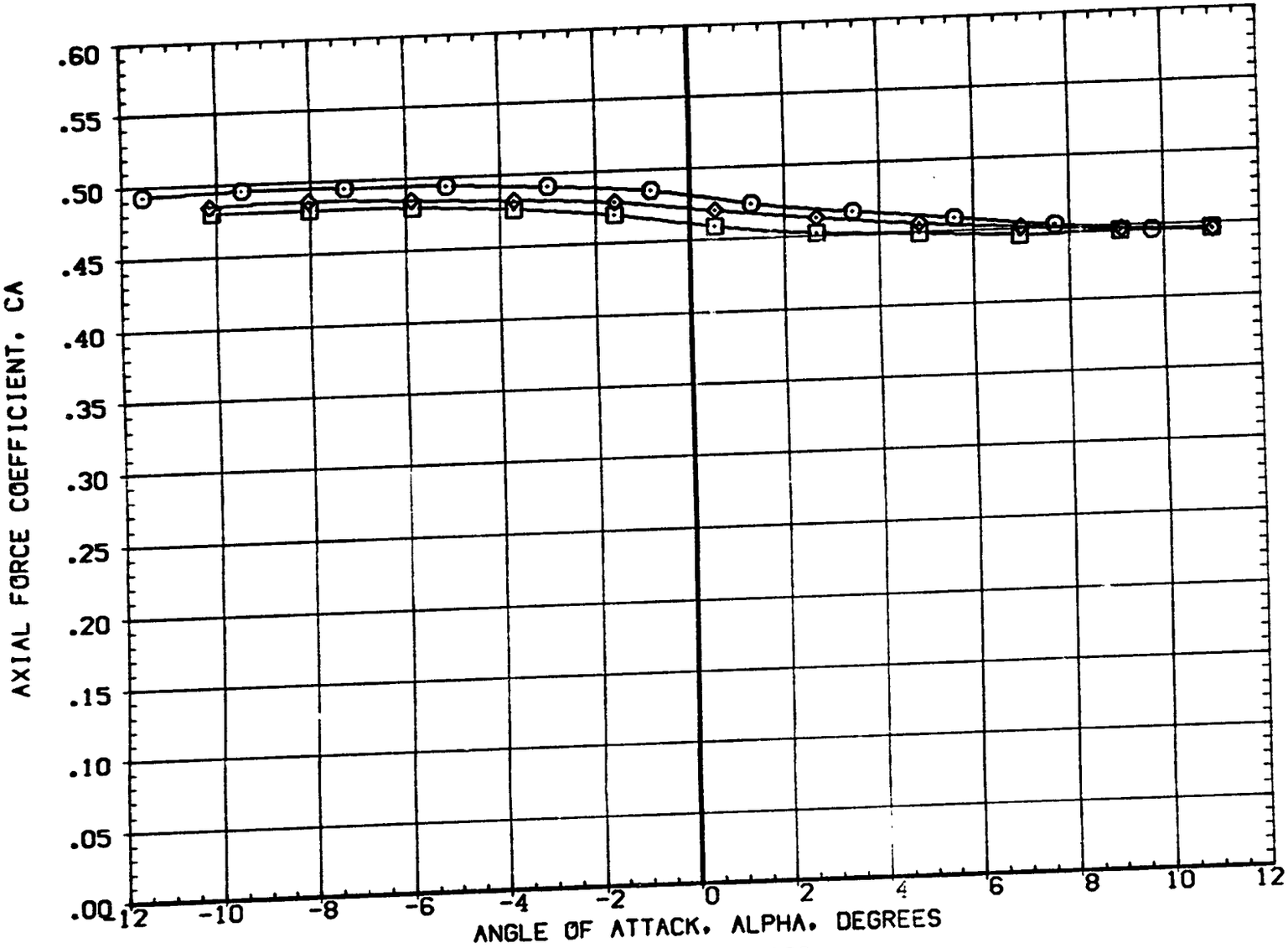
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAV
(B90000)	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90300)	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



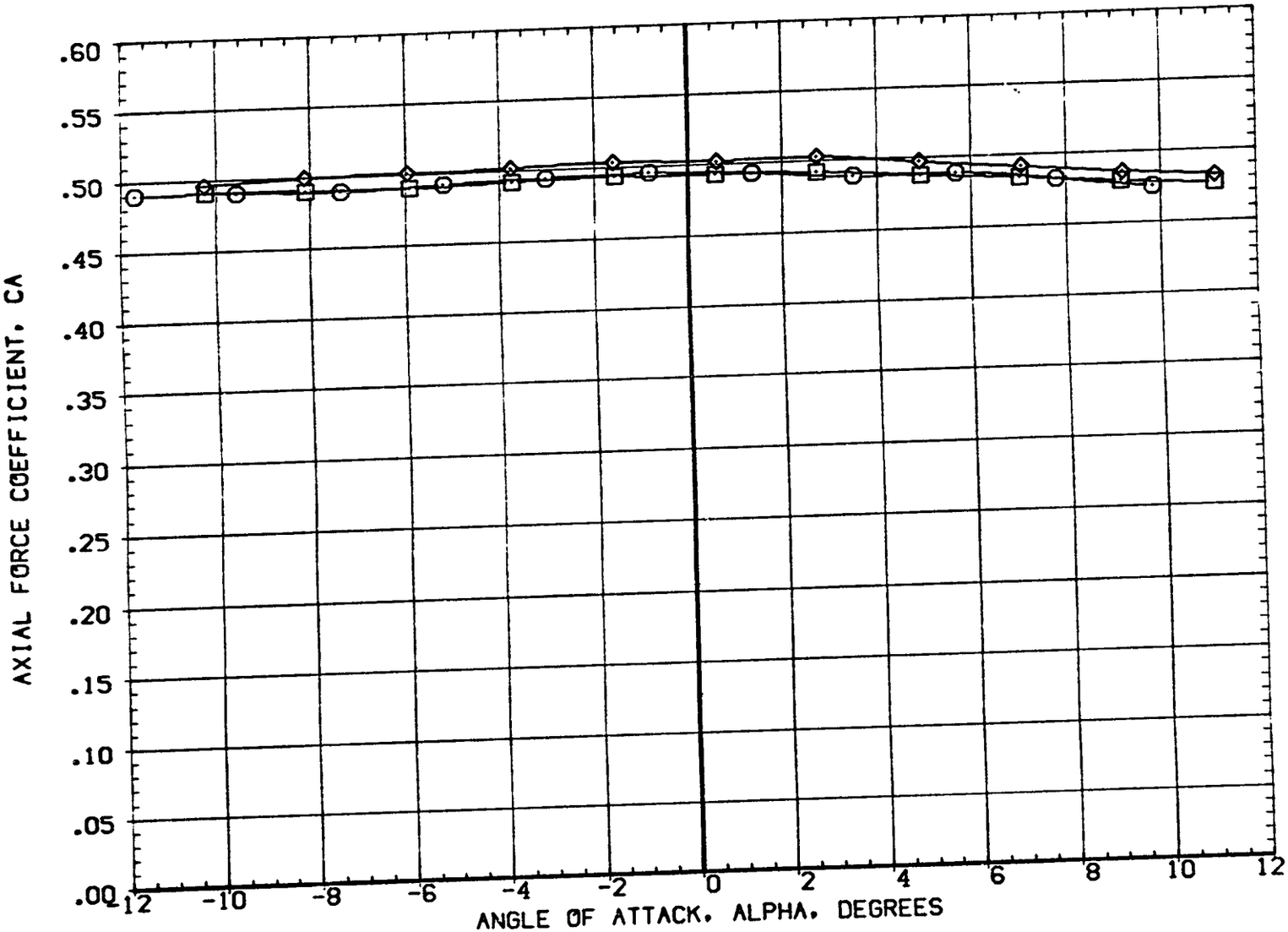
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



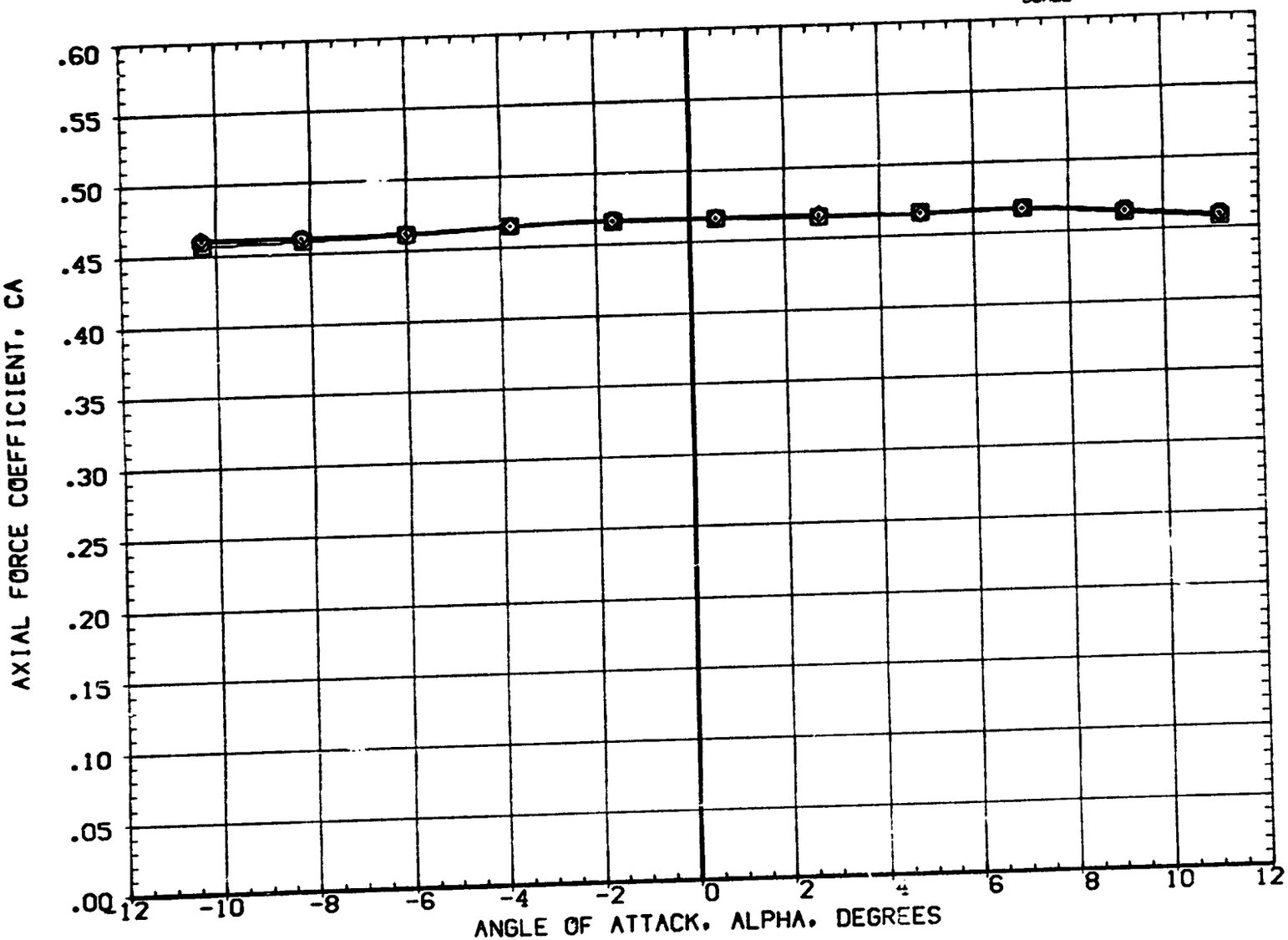
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(990000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



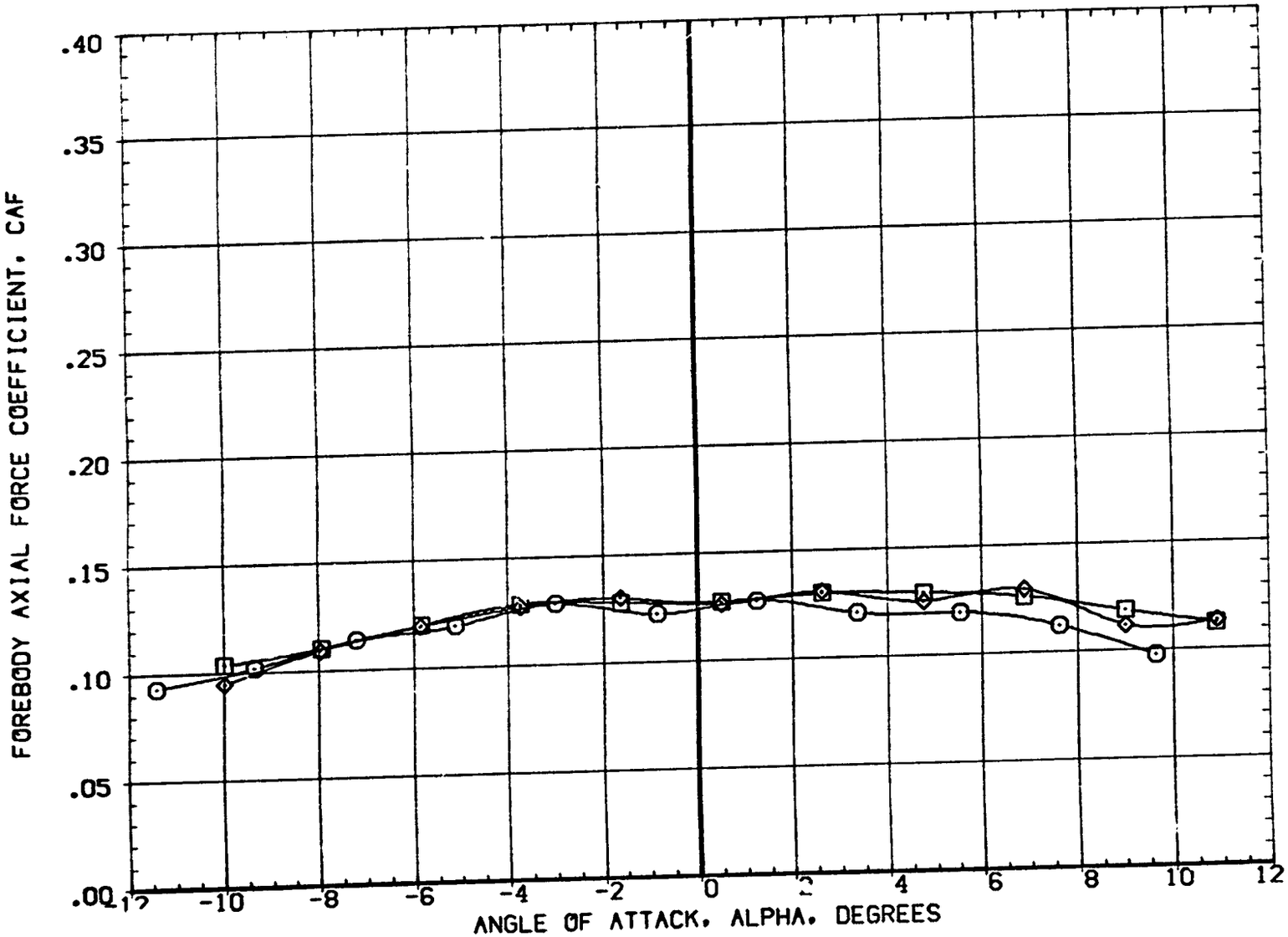
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



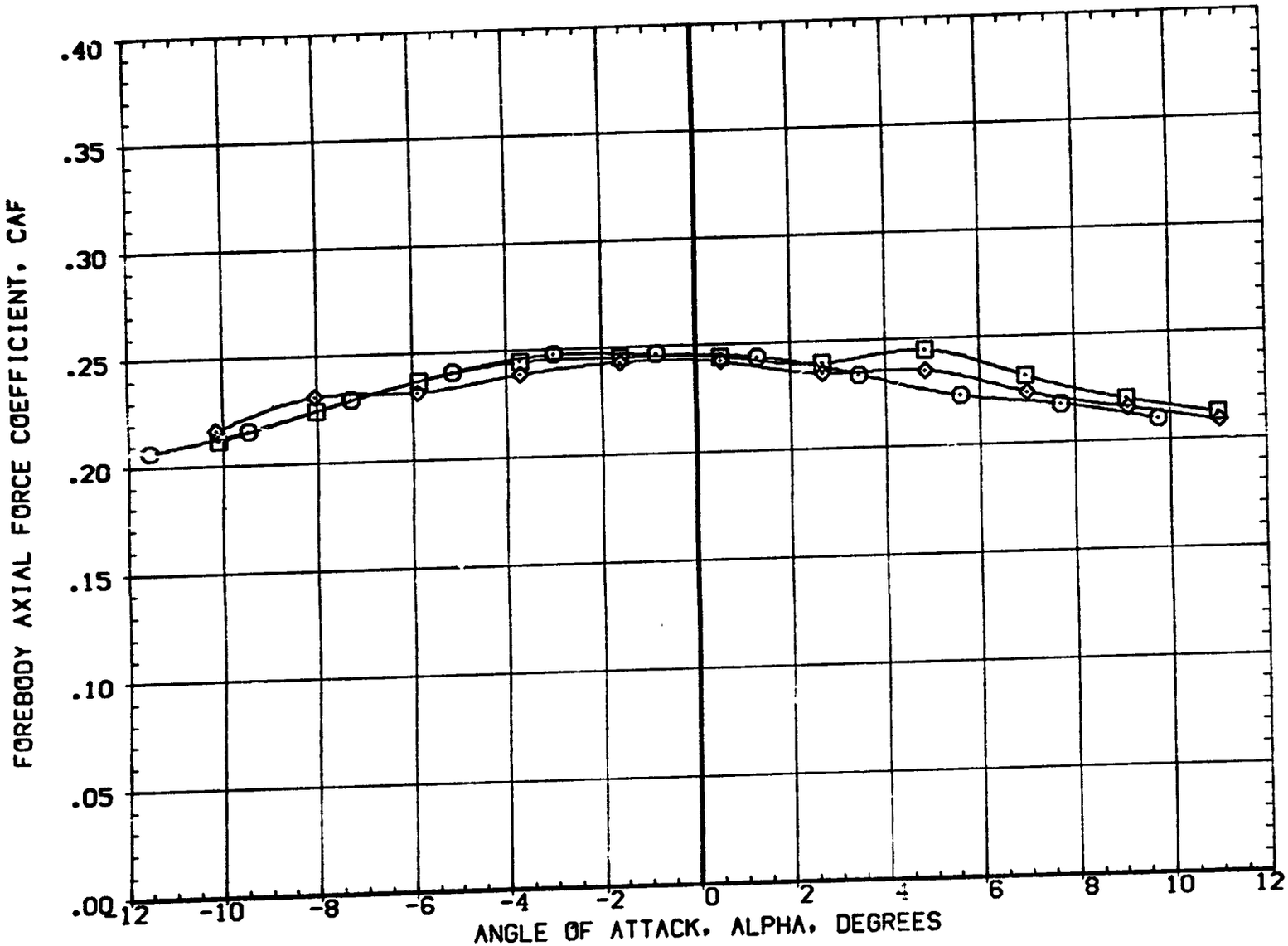
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



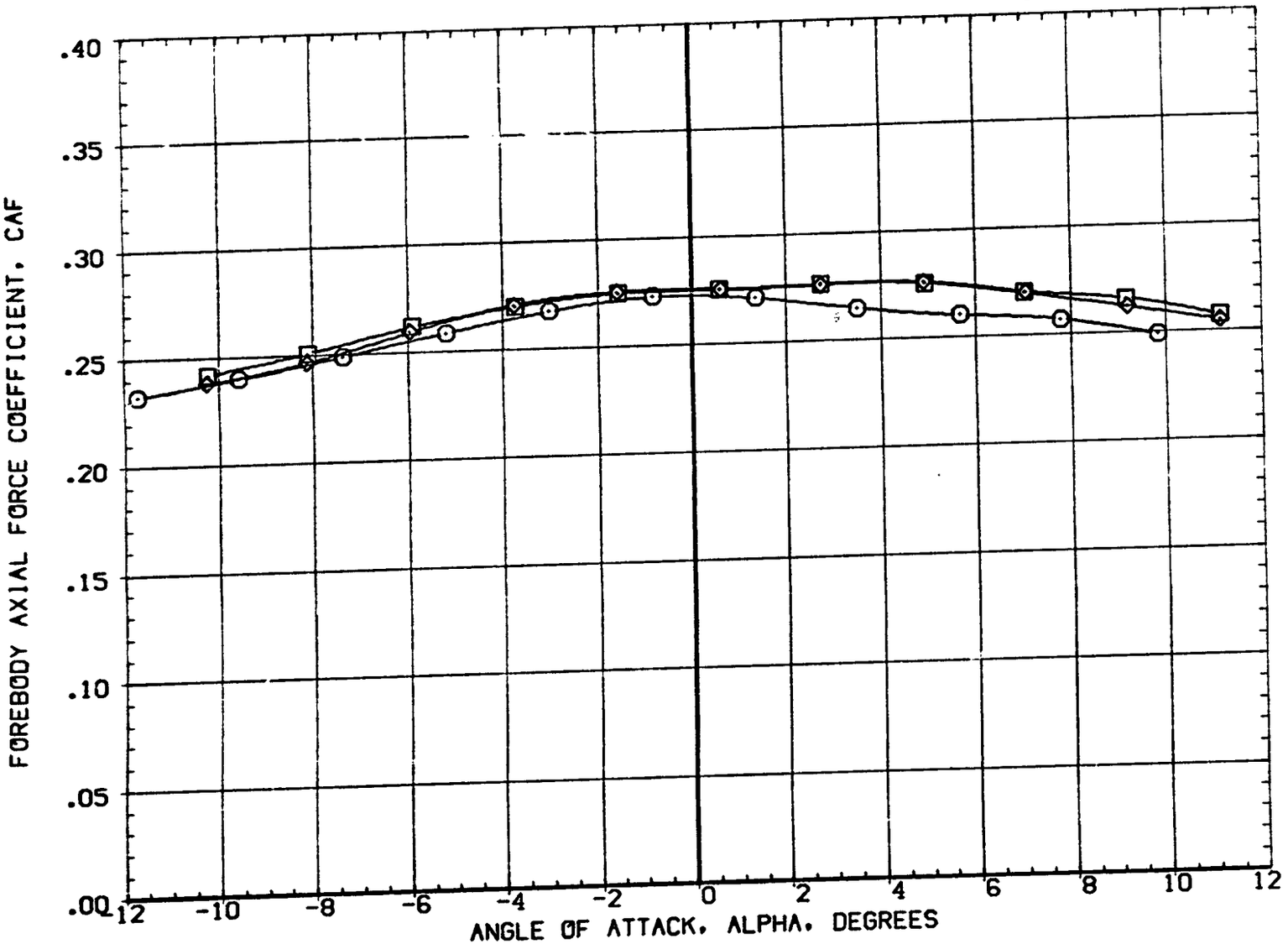
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



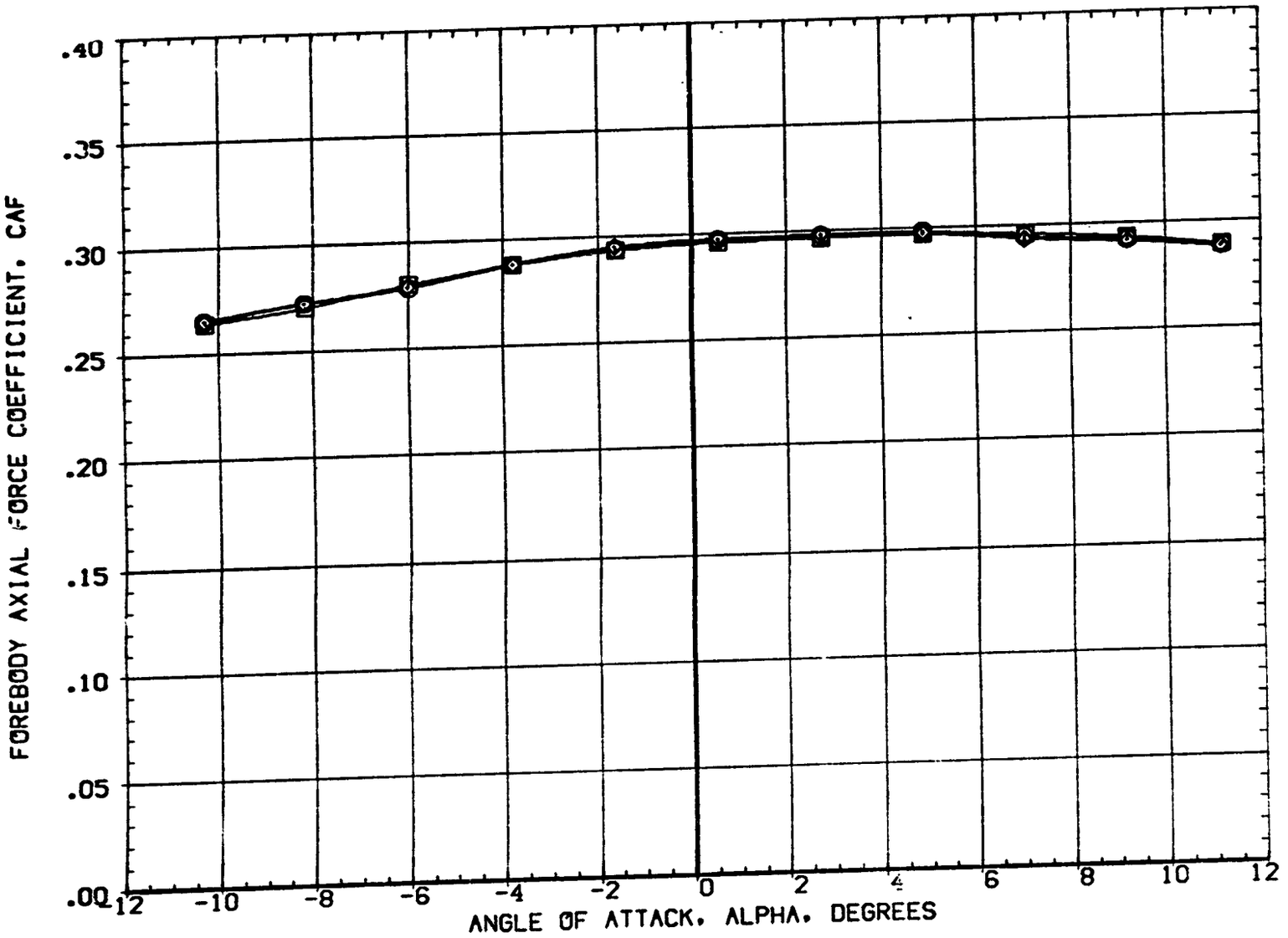
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



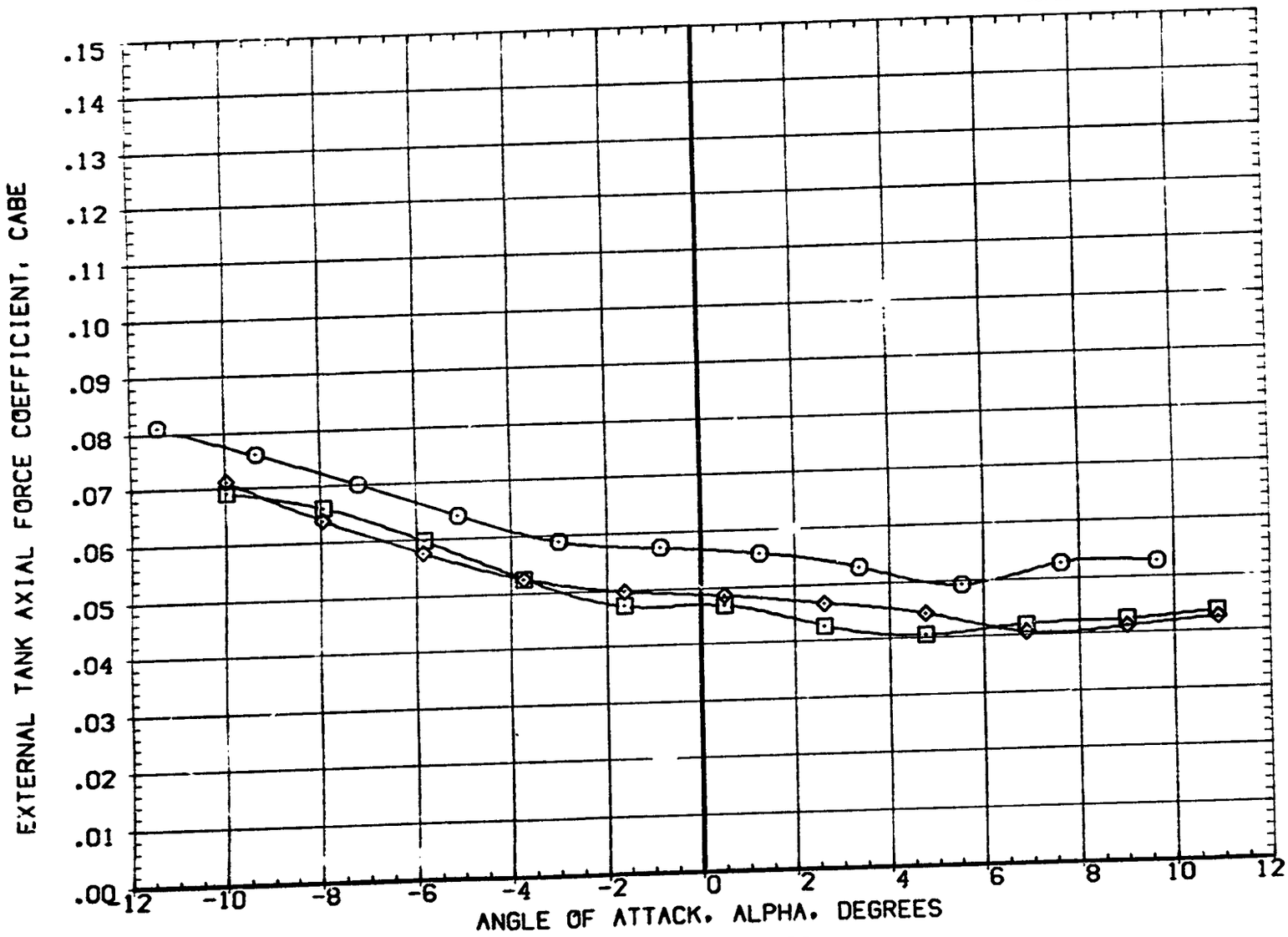
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



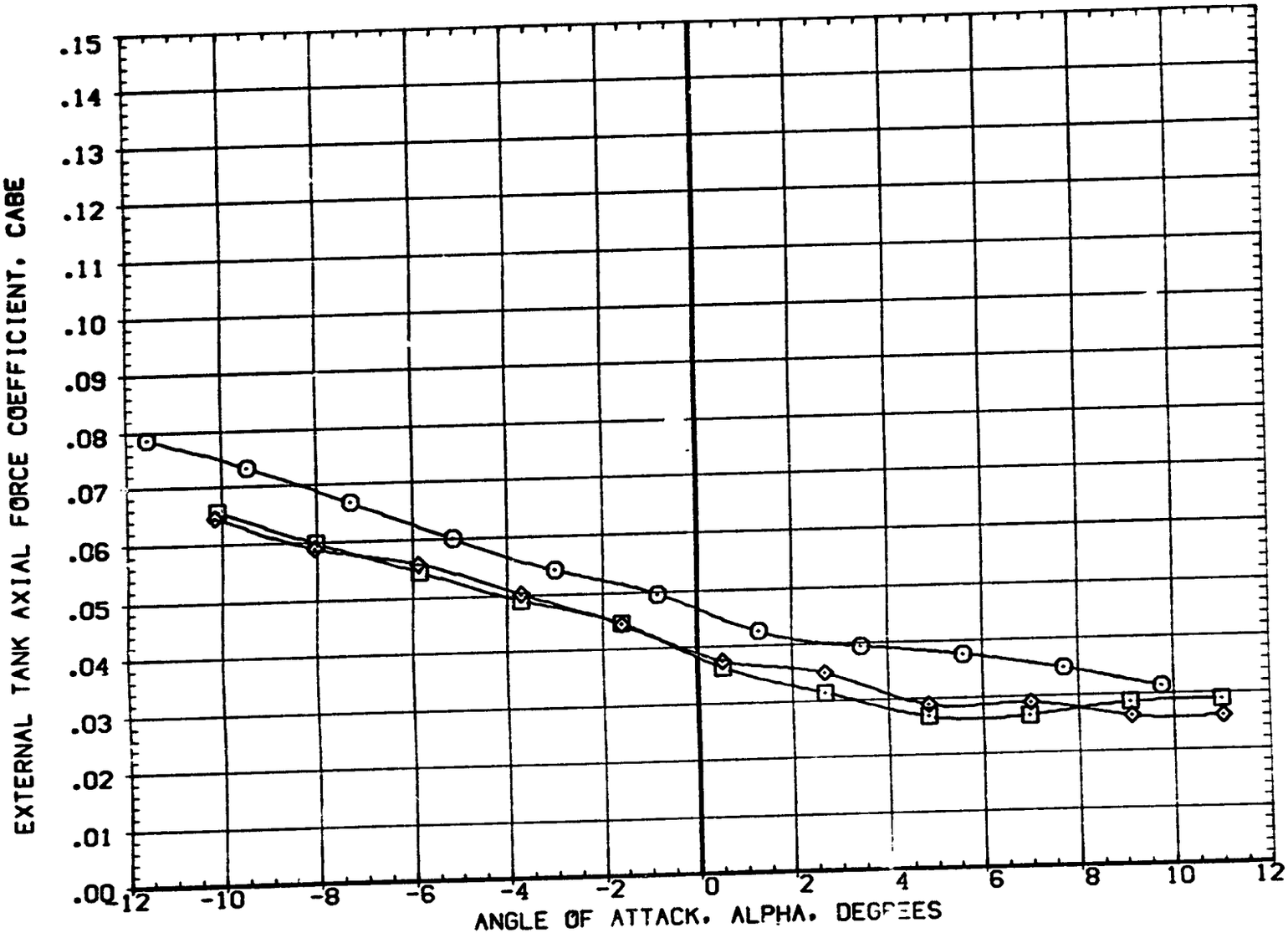
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC S73(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC S73(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	◇	MSFC S73(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



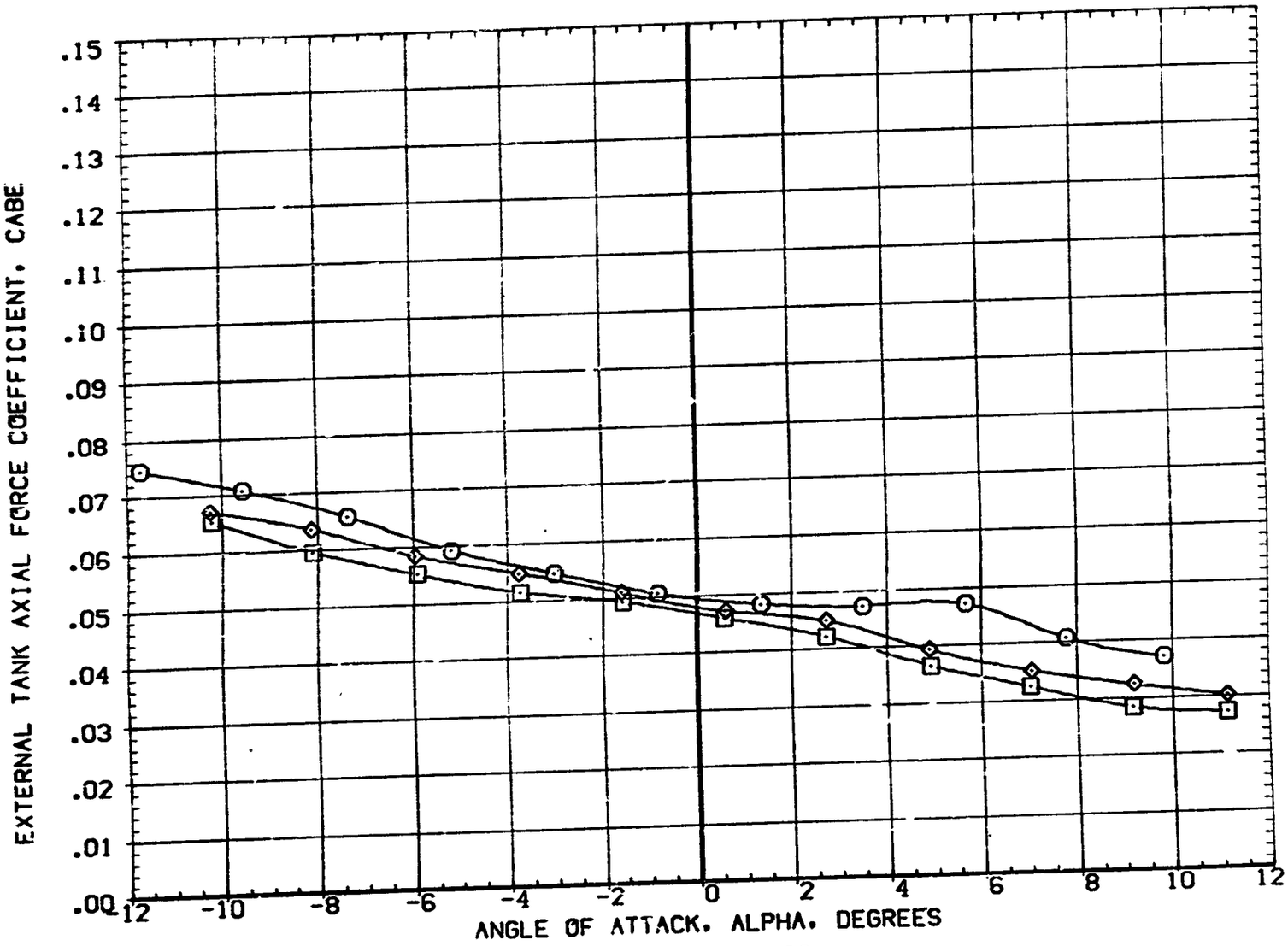
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	MSFC 573(IA3)FC) (03)(T9)(S3)	.500	.140	
(890300)	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890301)	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



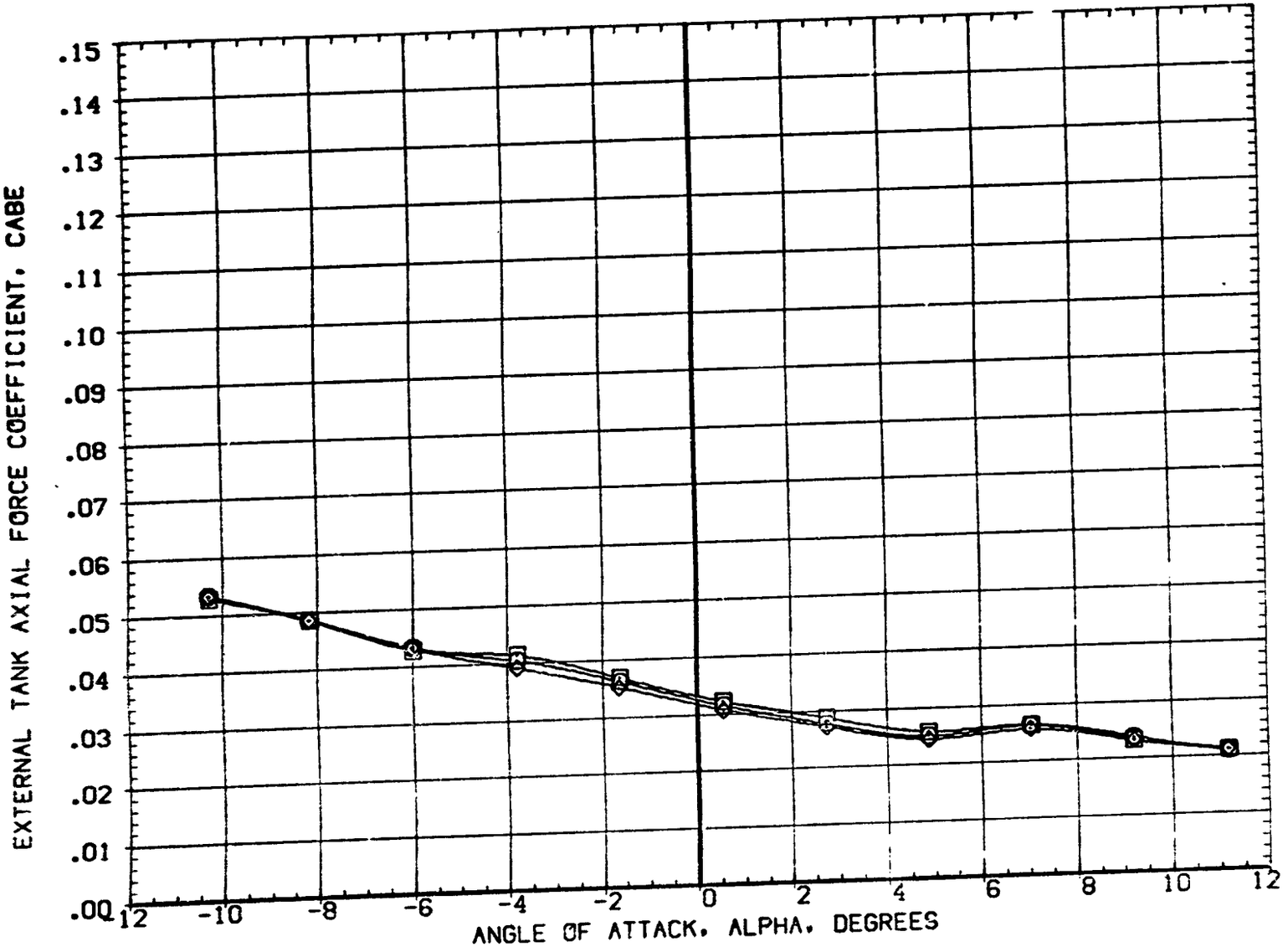
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



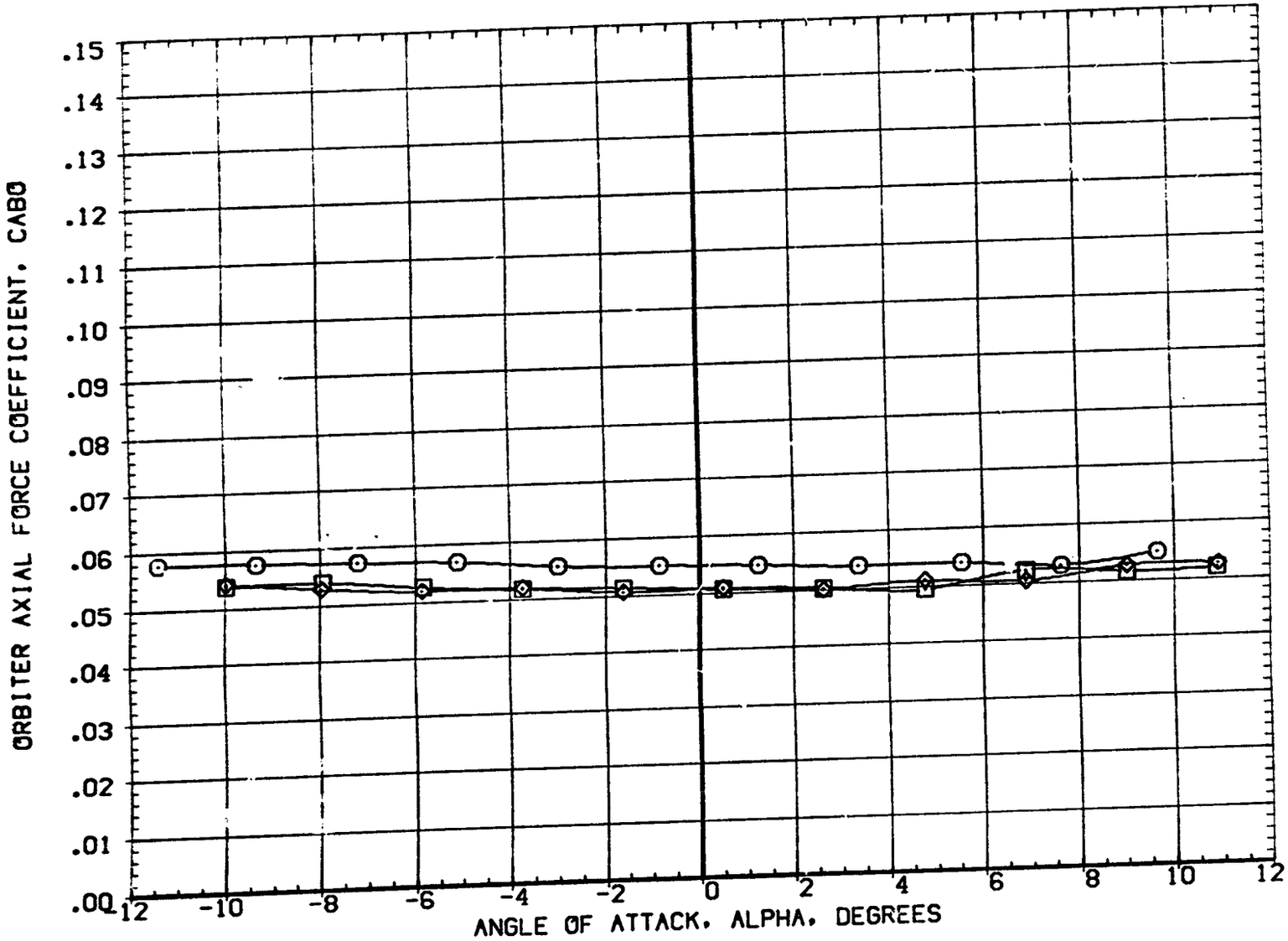
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



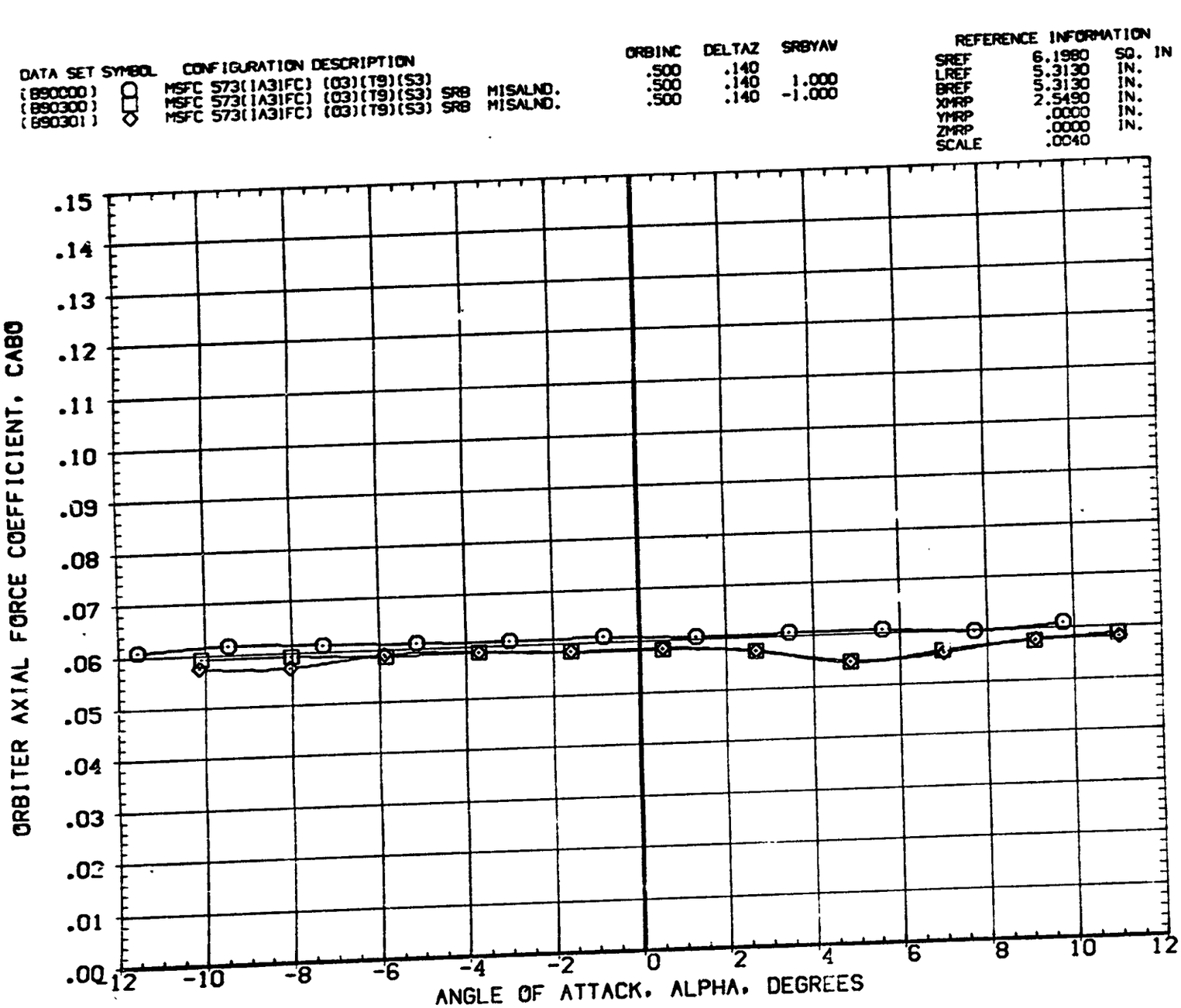
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



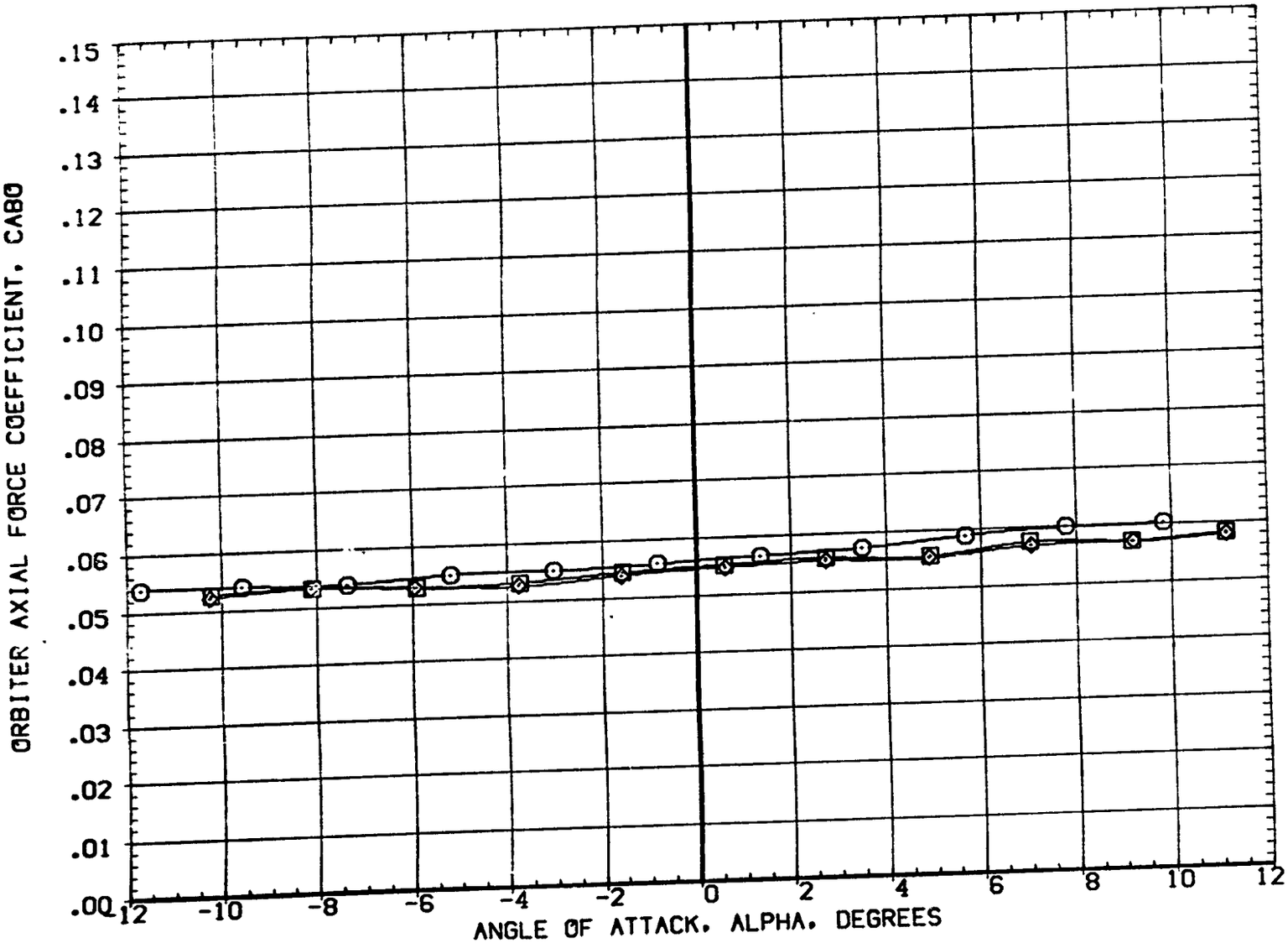
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301) ◇	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



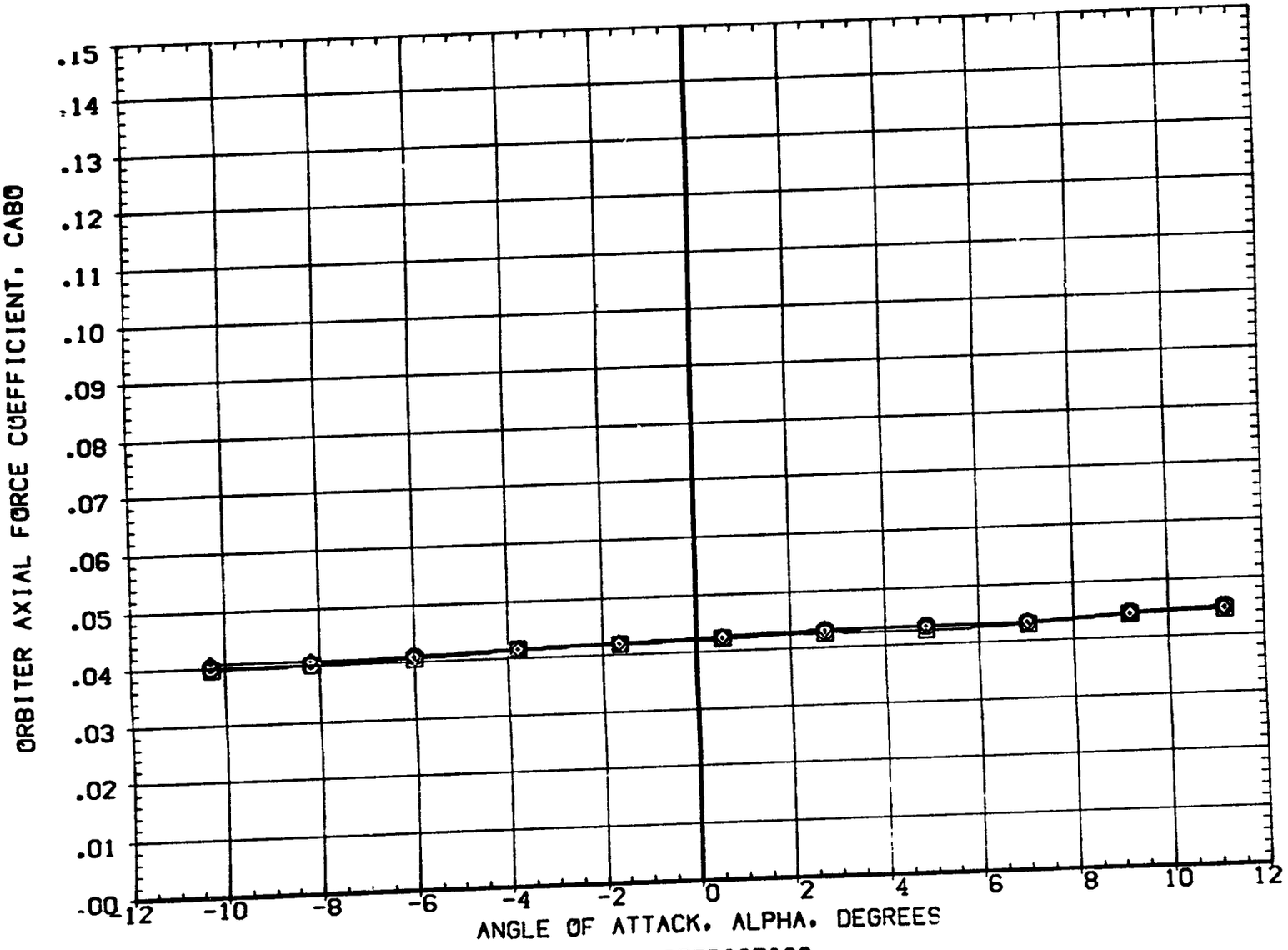
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890300) □	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301) ◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



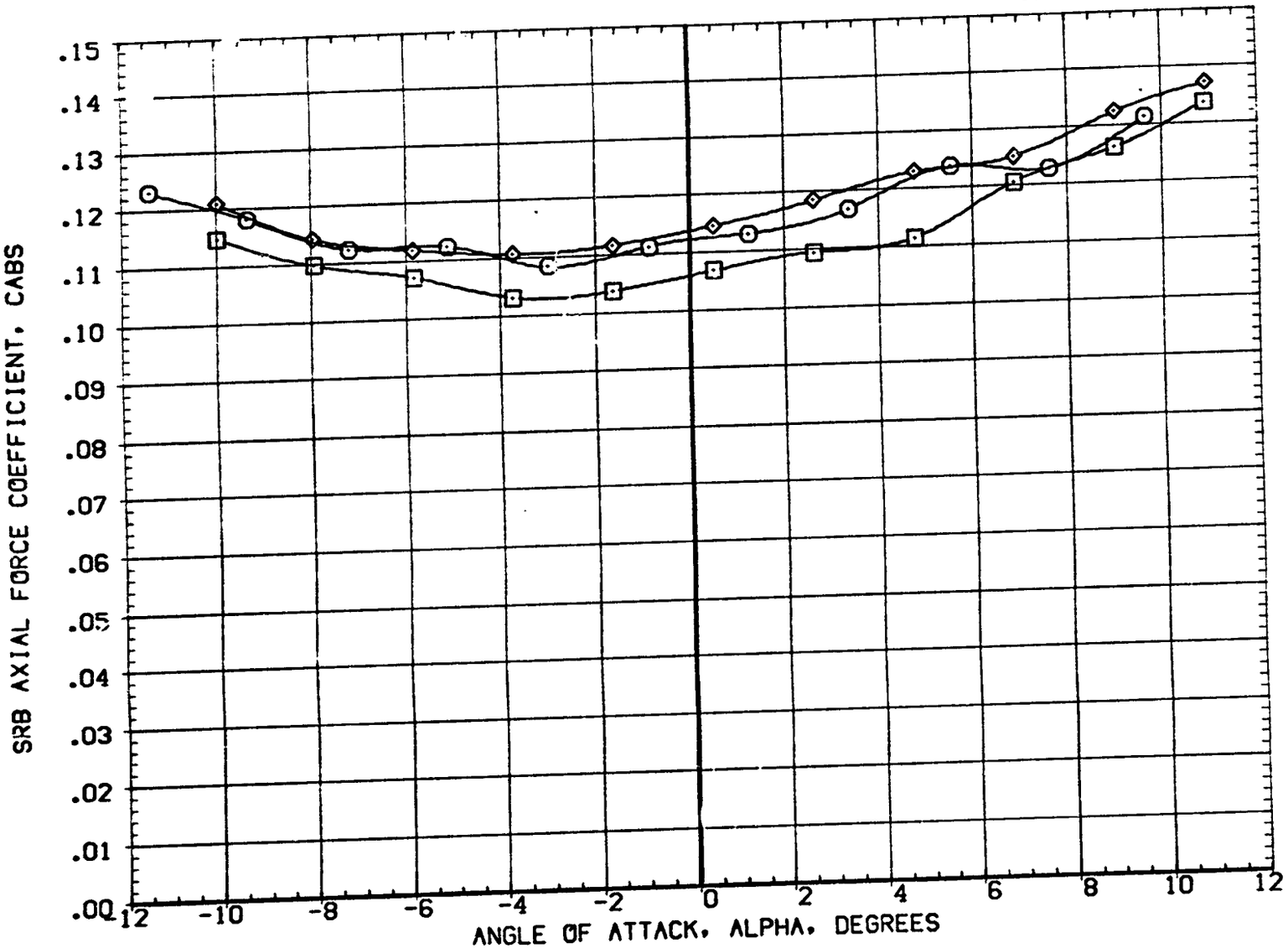
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

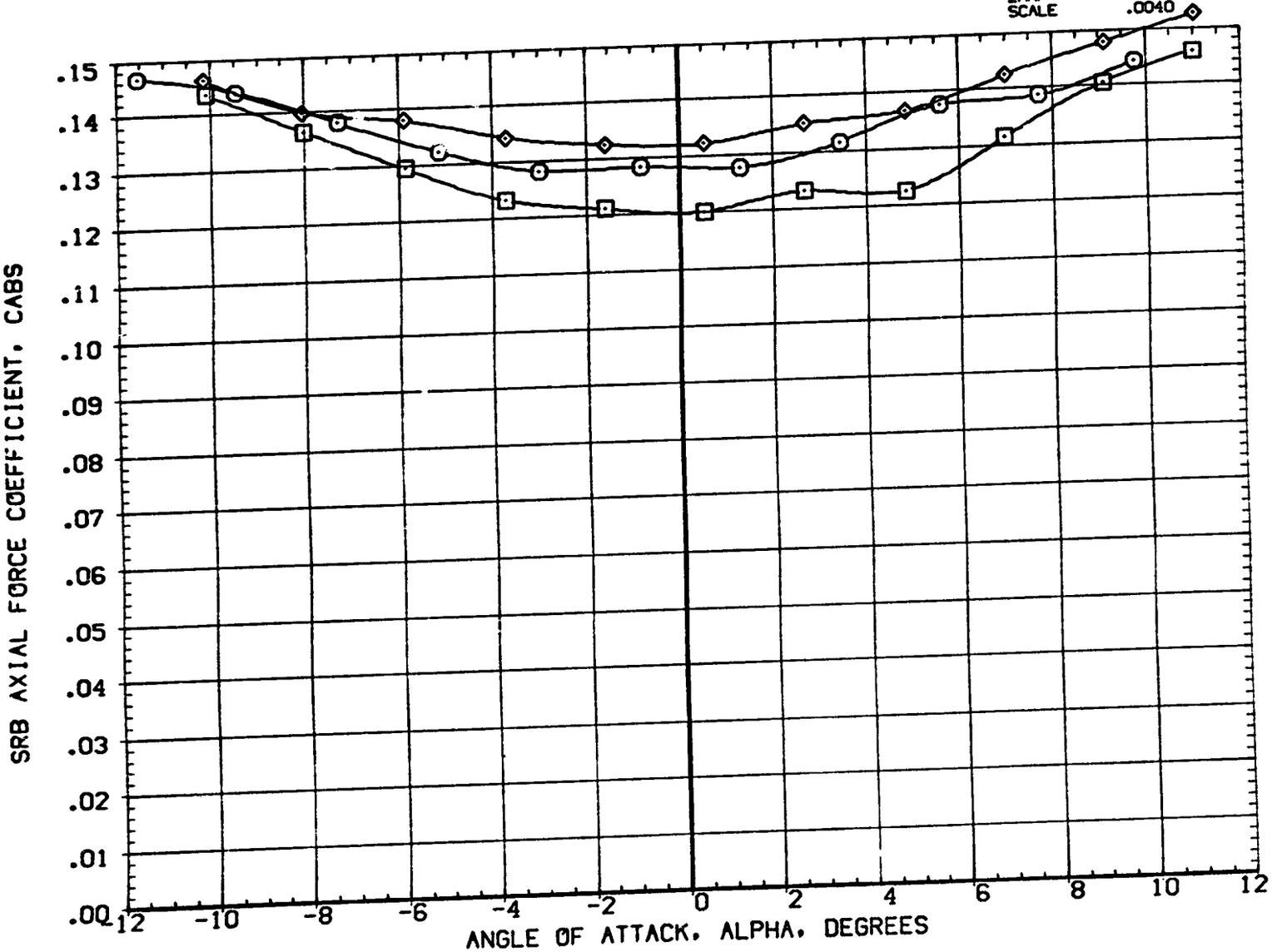


EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



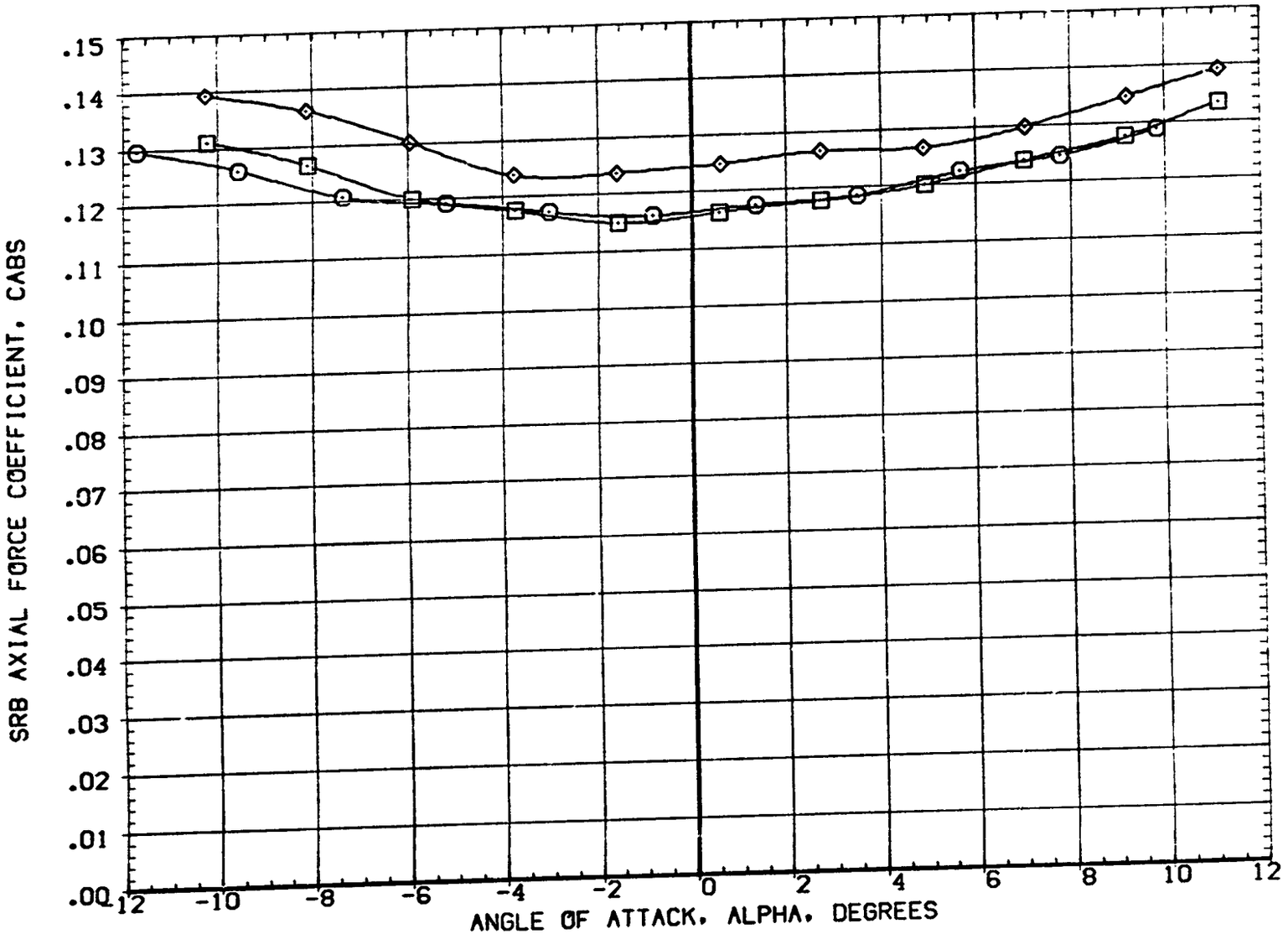
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	□	MSFC 573(1A31FC) (03)(T9)(S2)	.500	.140	
(B90300)	◁	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SC/LE	.0040	



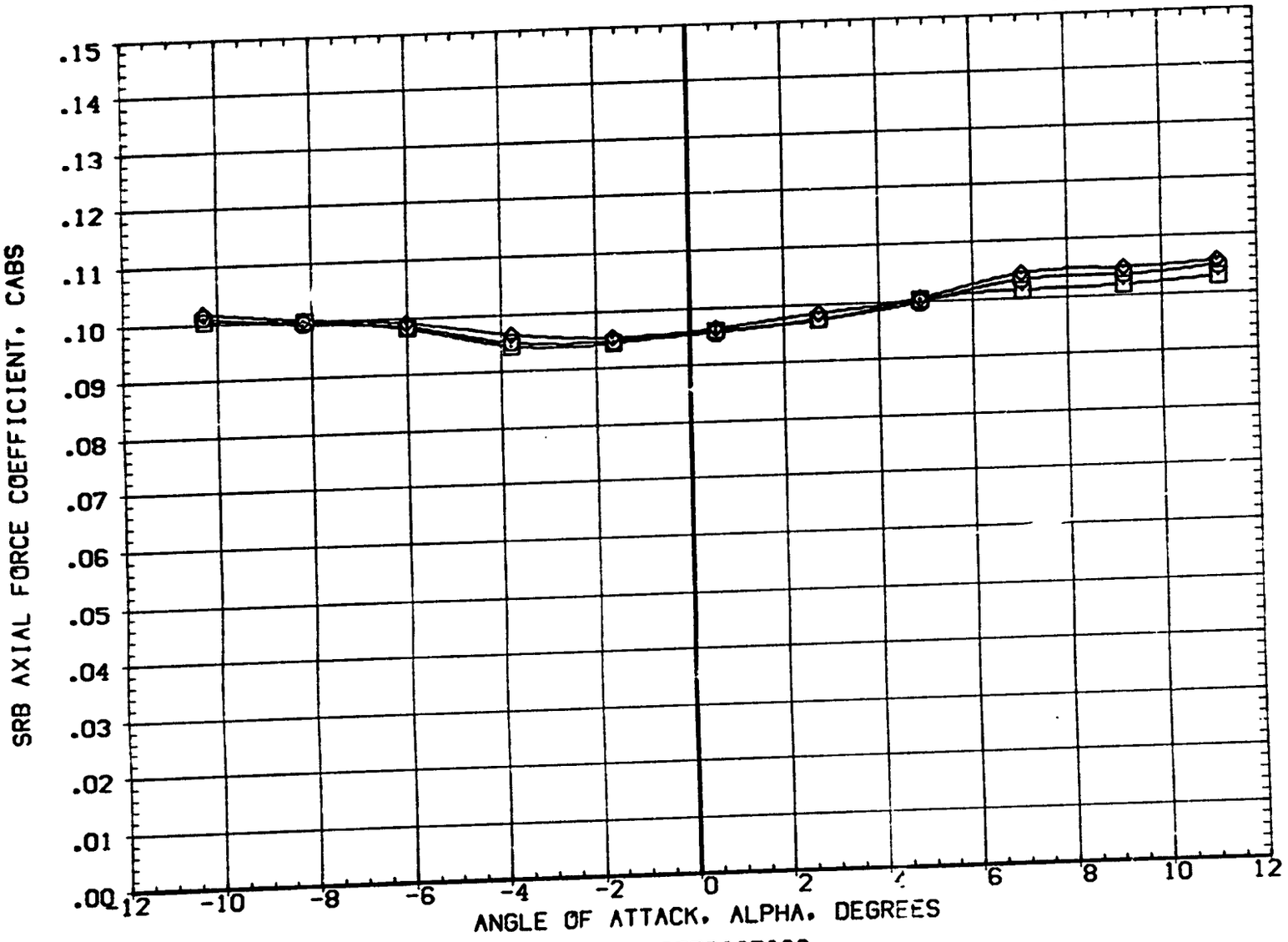
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90C00) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



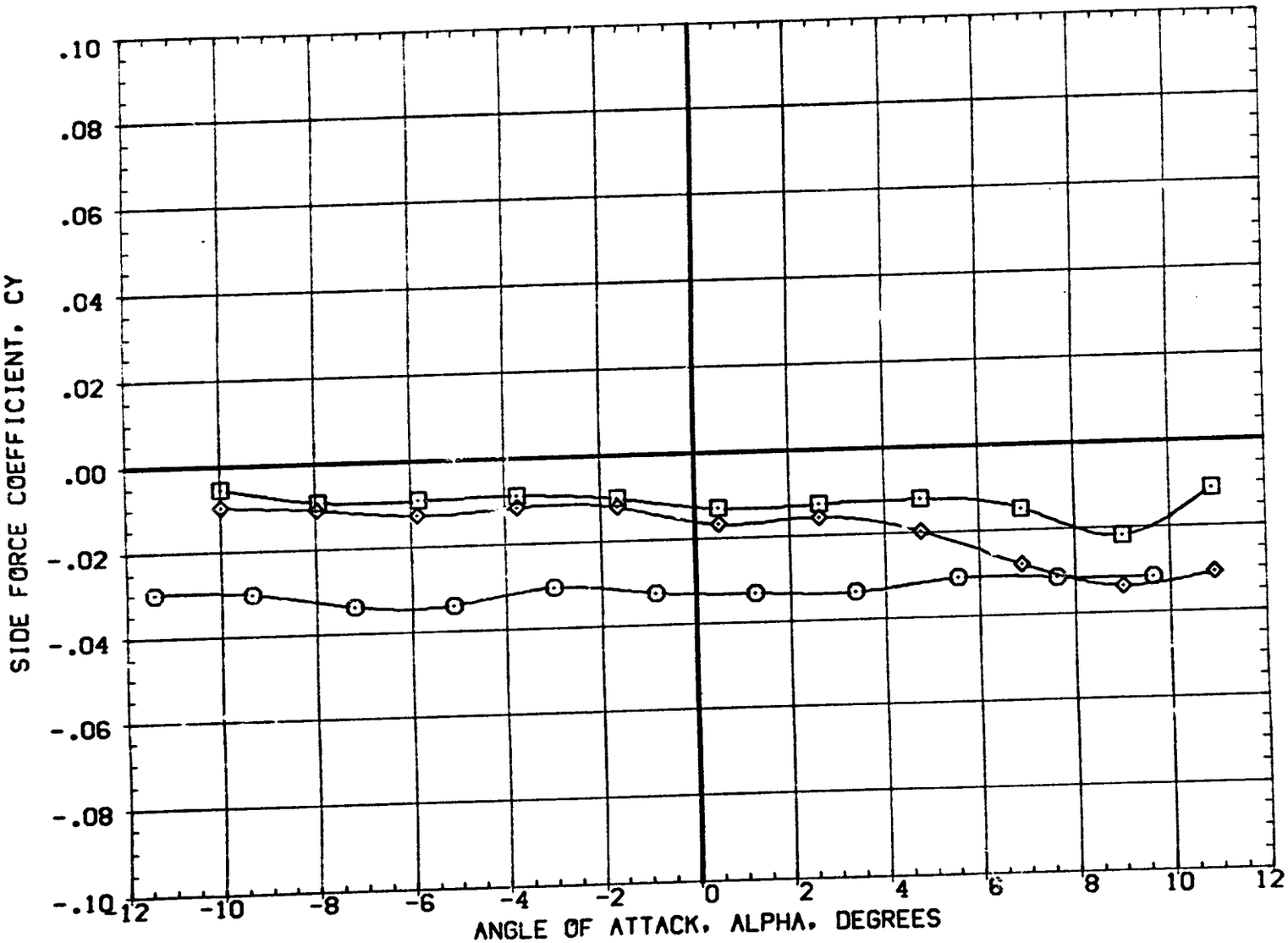
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	□	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890300)	◇	MSFC 573(1A3)FC) (03)(T3)(S3) SRB MISALND.	.500	.140	1.000
(890301)	◇	MSFC 573(1A3)FC) (03)(T3)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



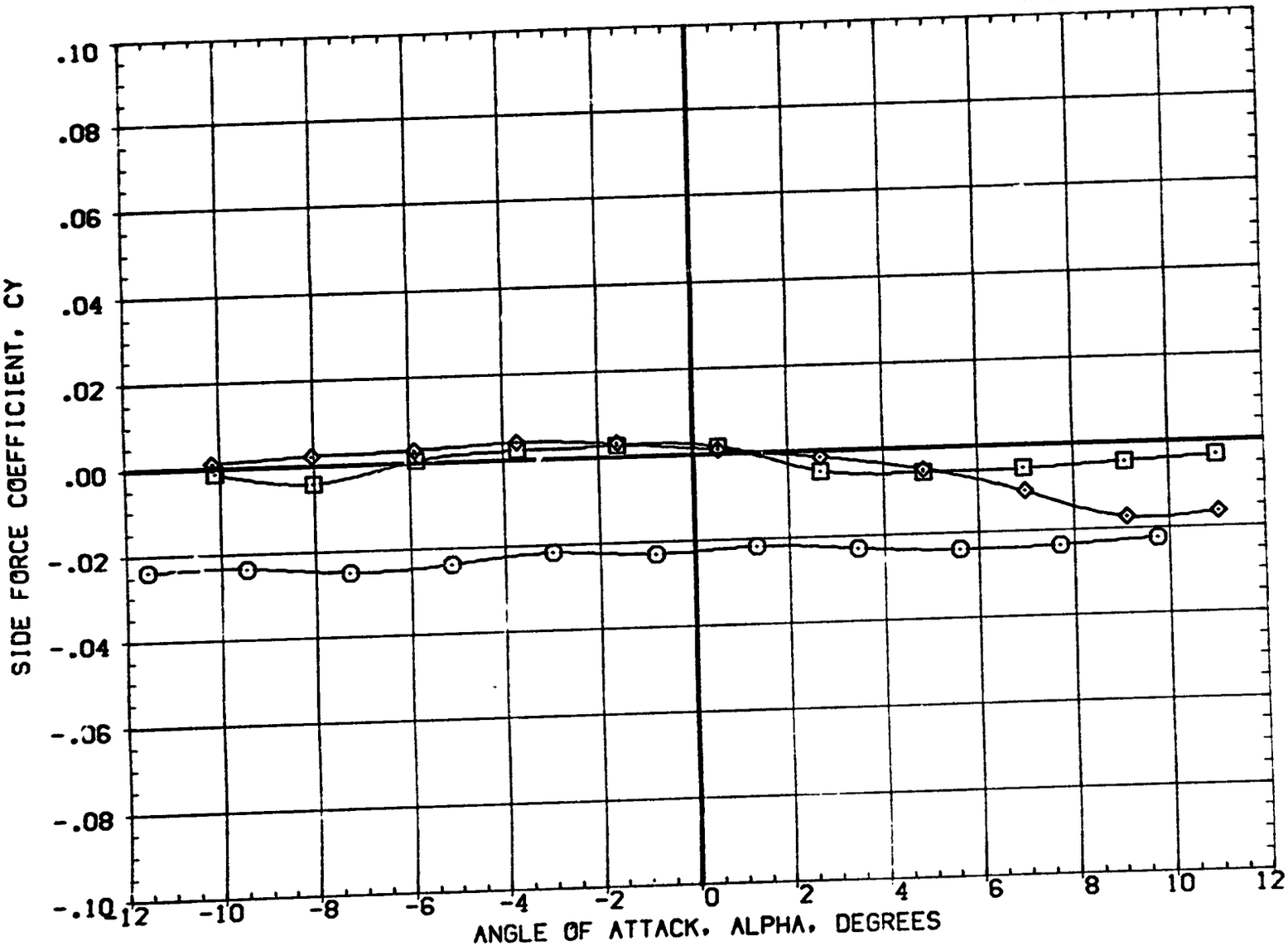
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890301)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



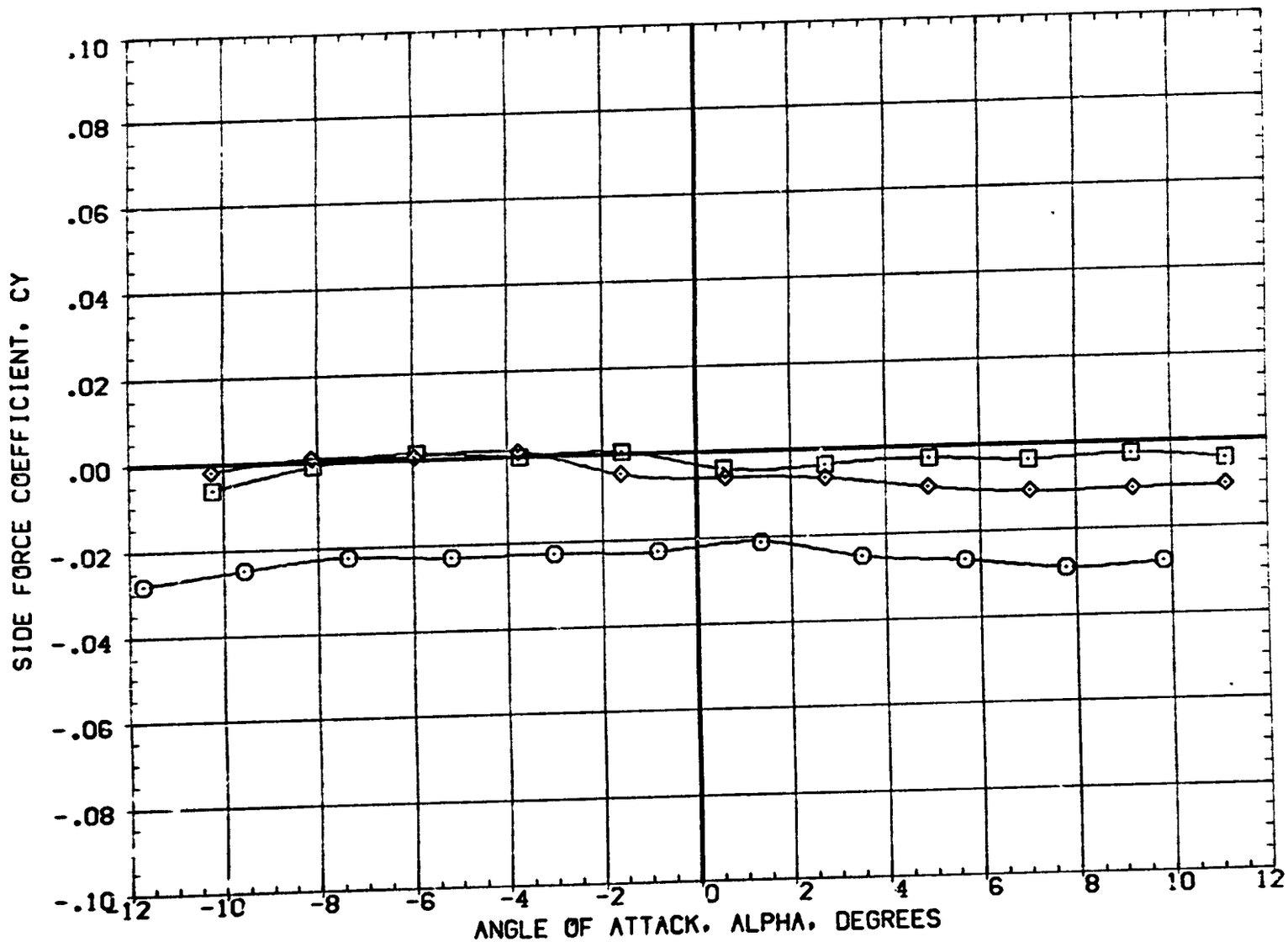
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(B90300)	MSFC 573(IA3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	MSFC 573(IA3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



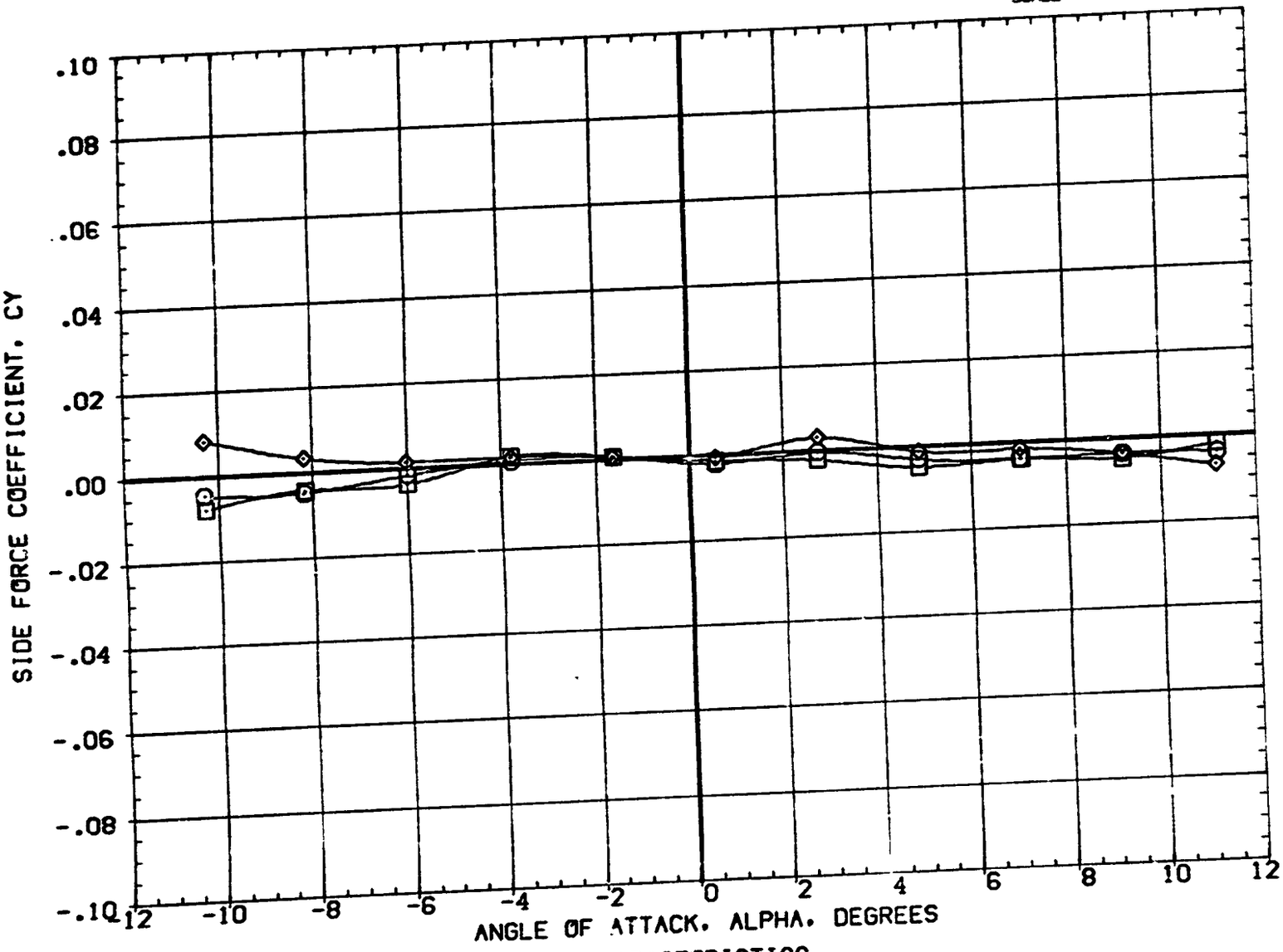
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B9030')	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.50(	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



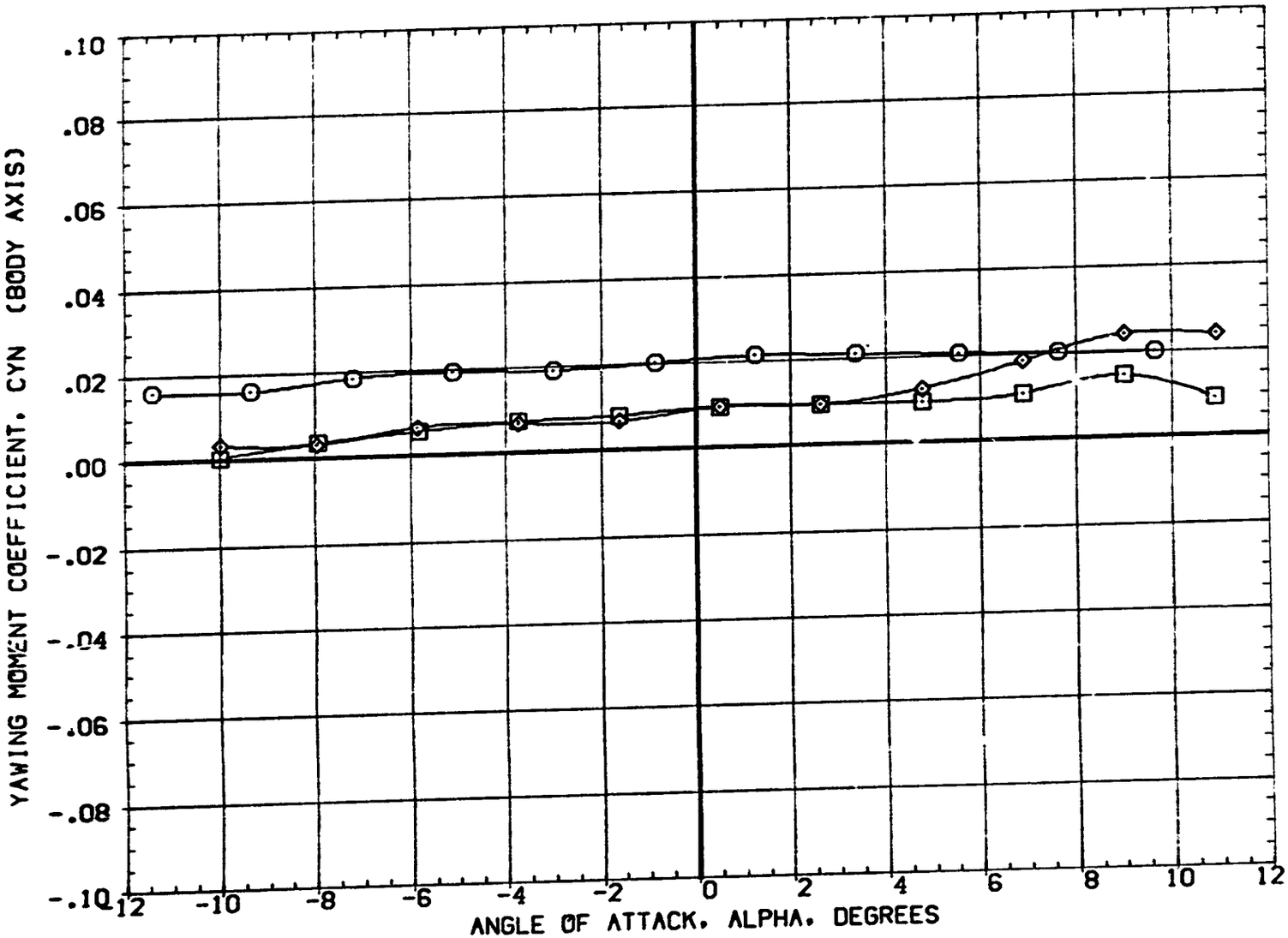
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



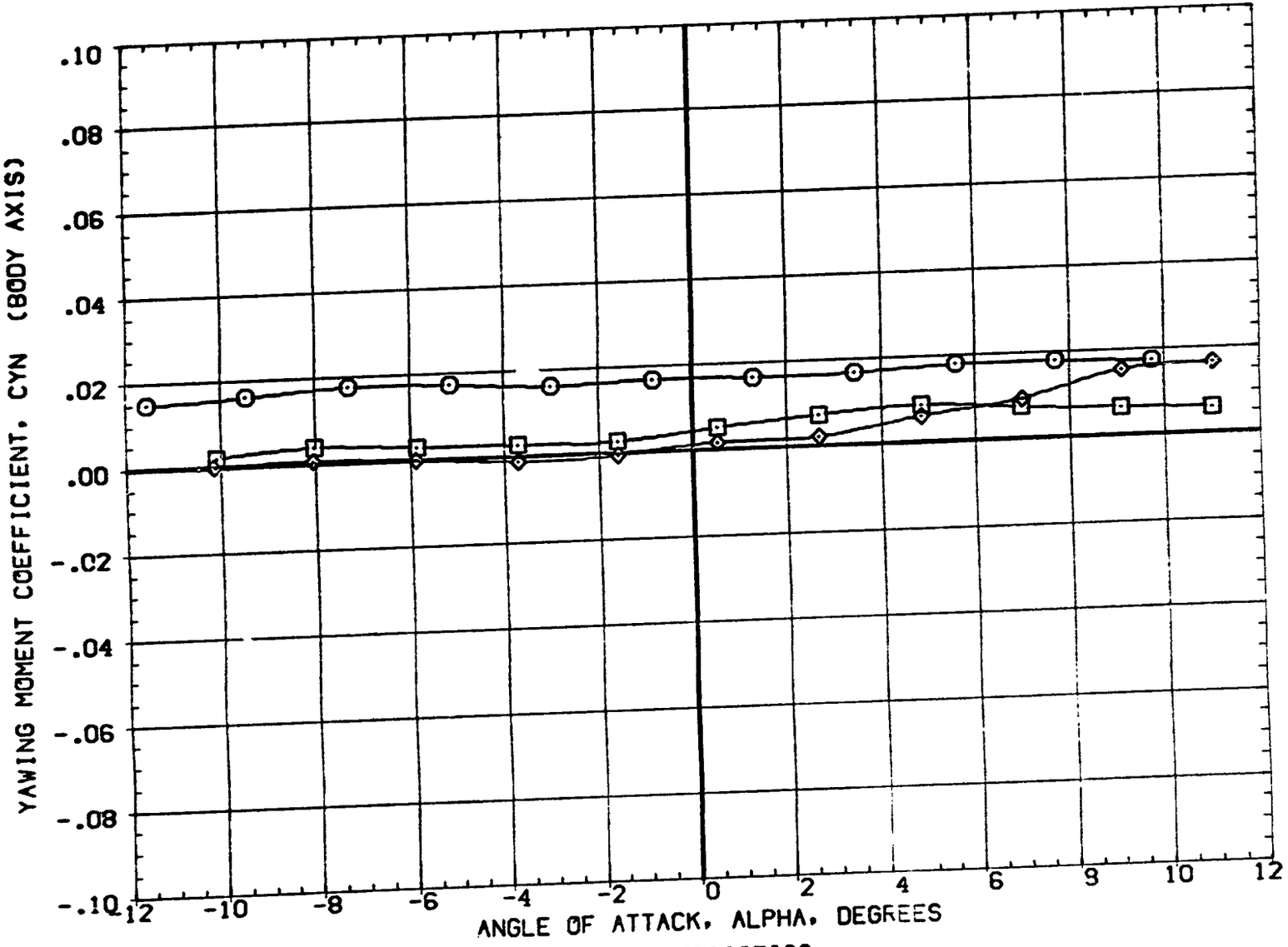
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



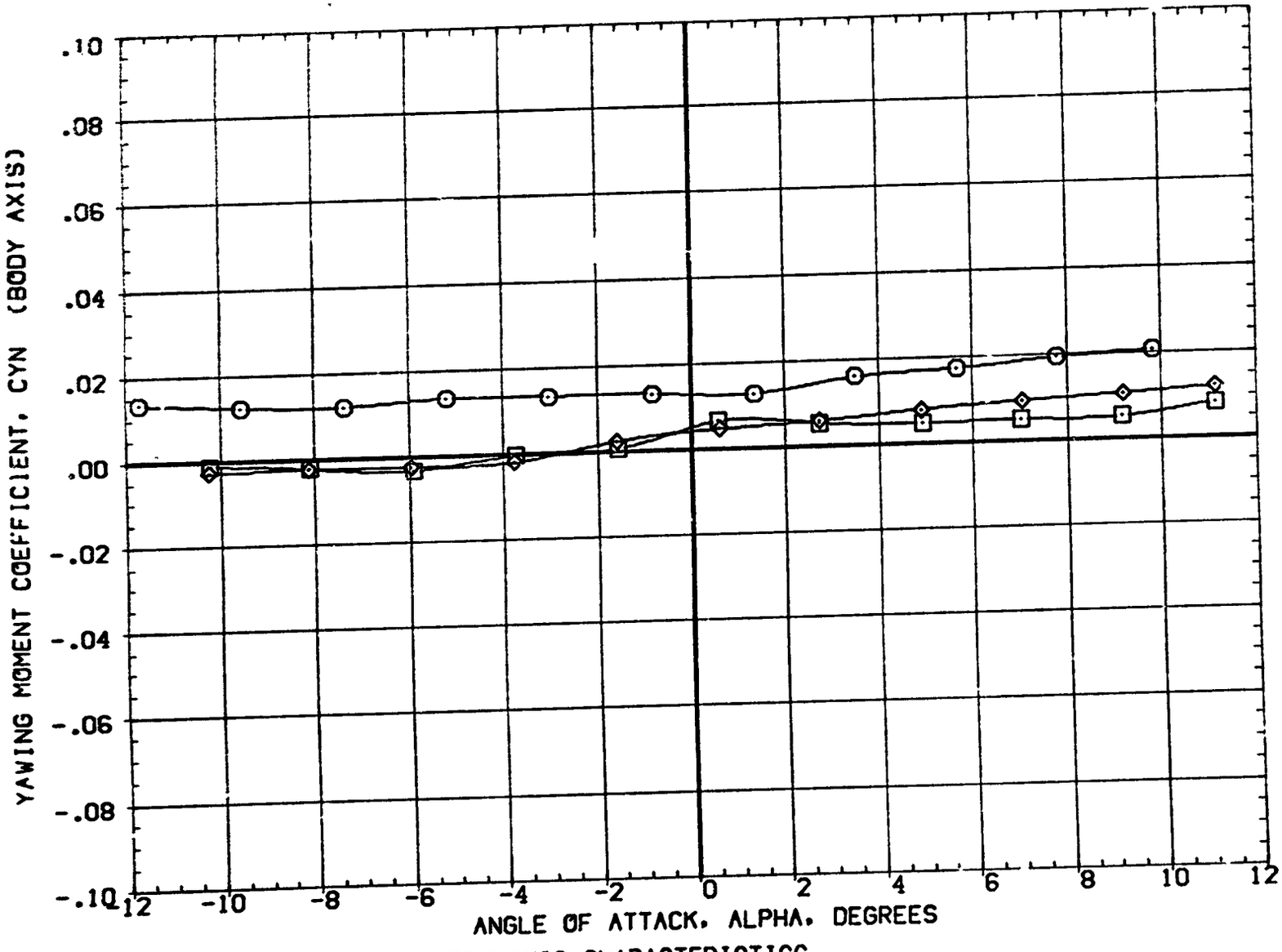
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORPINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0C'0	



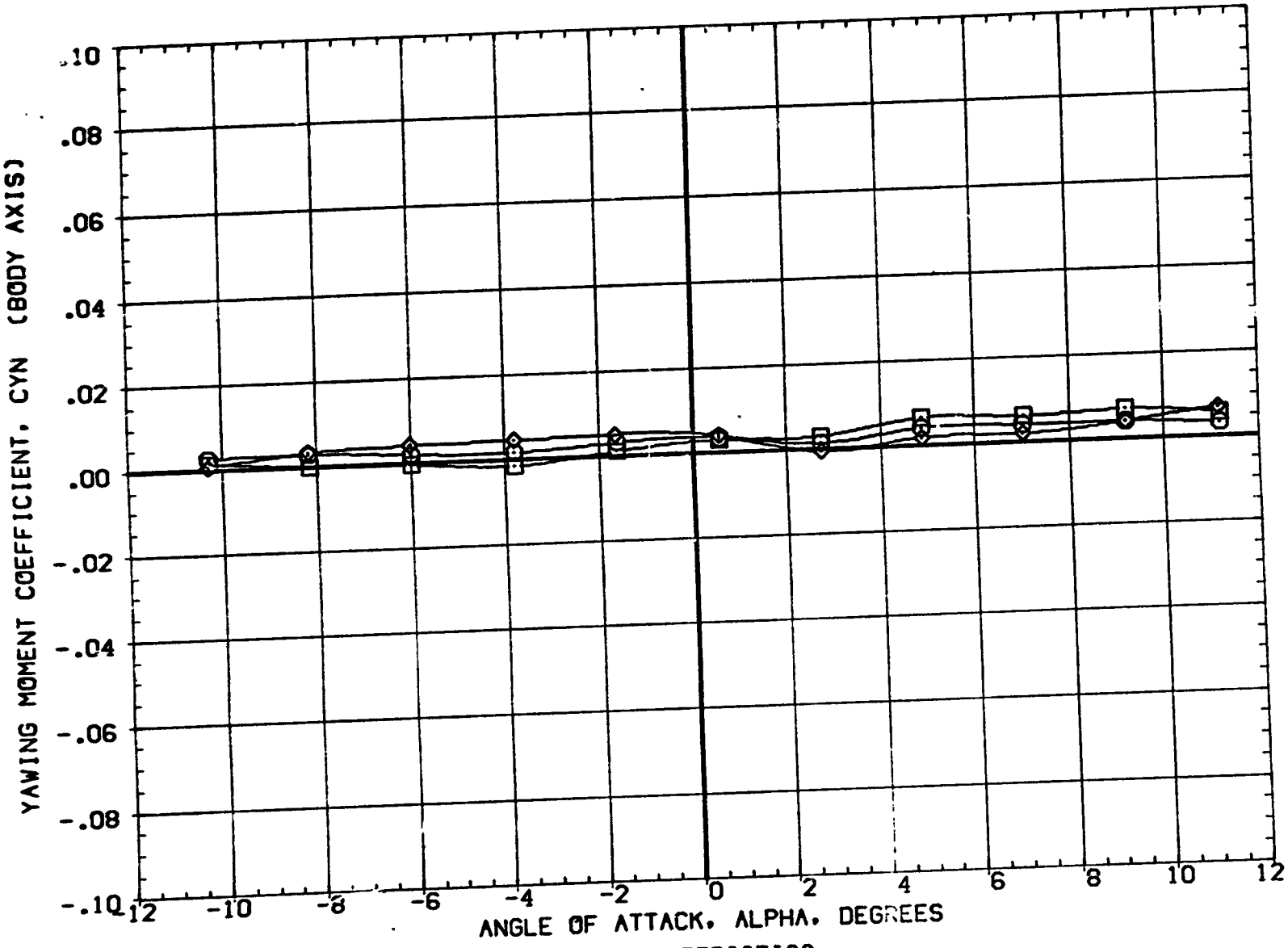
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



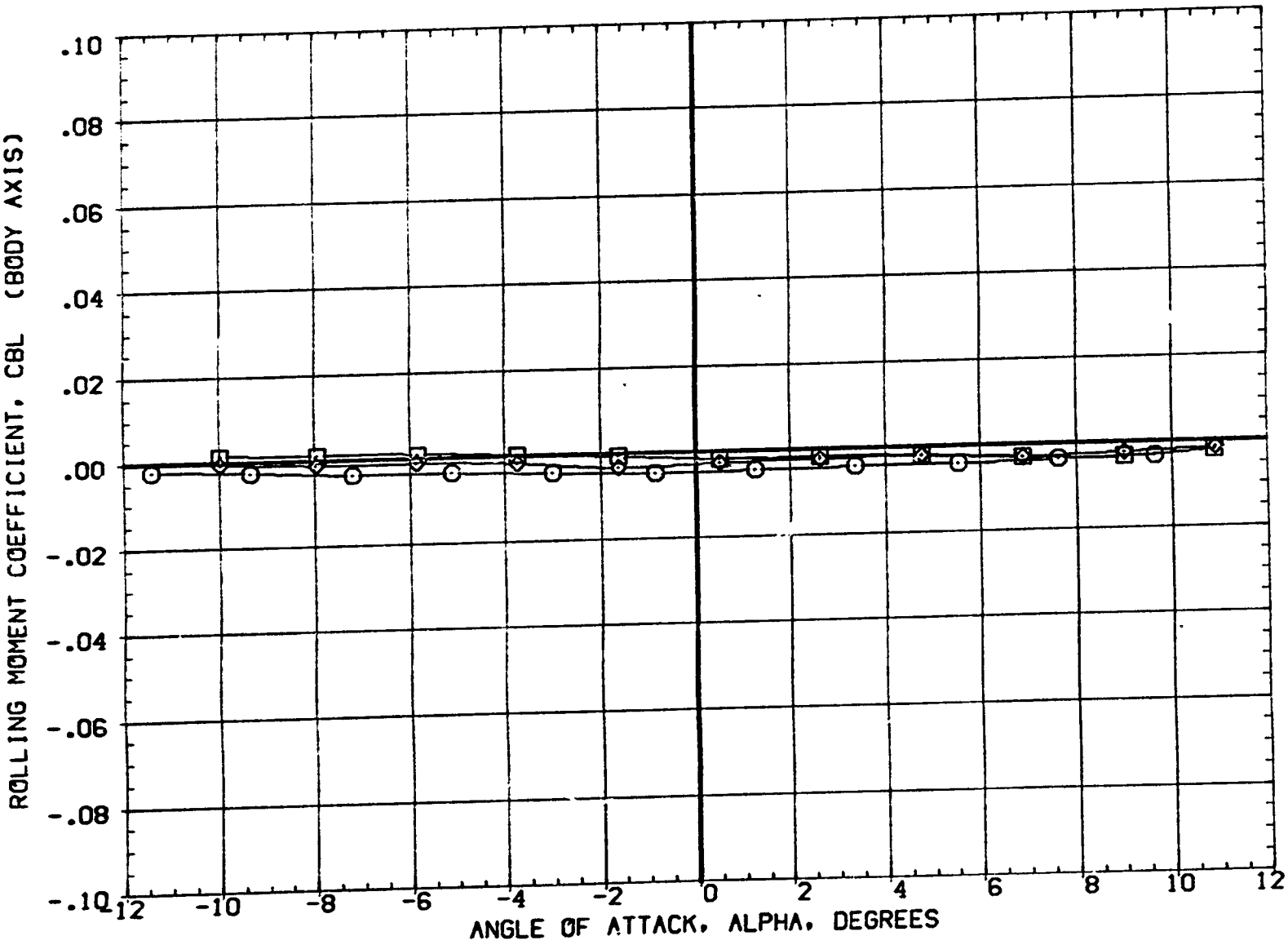
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890300)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890301)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



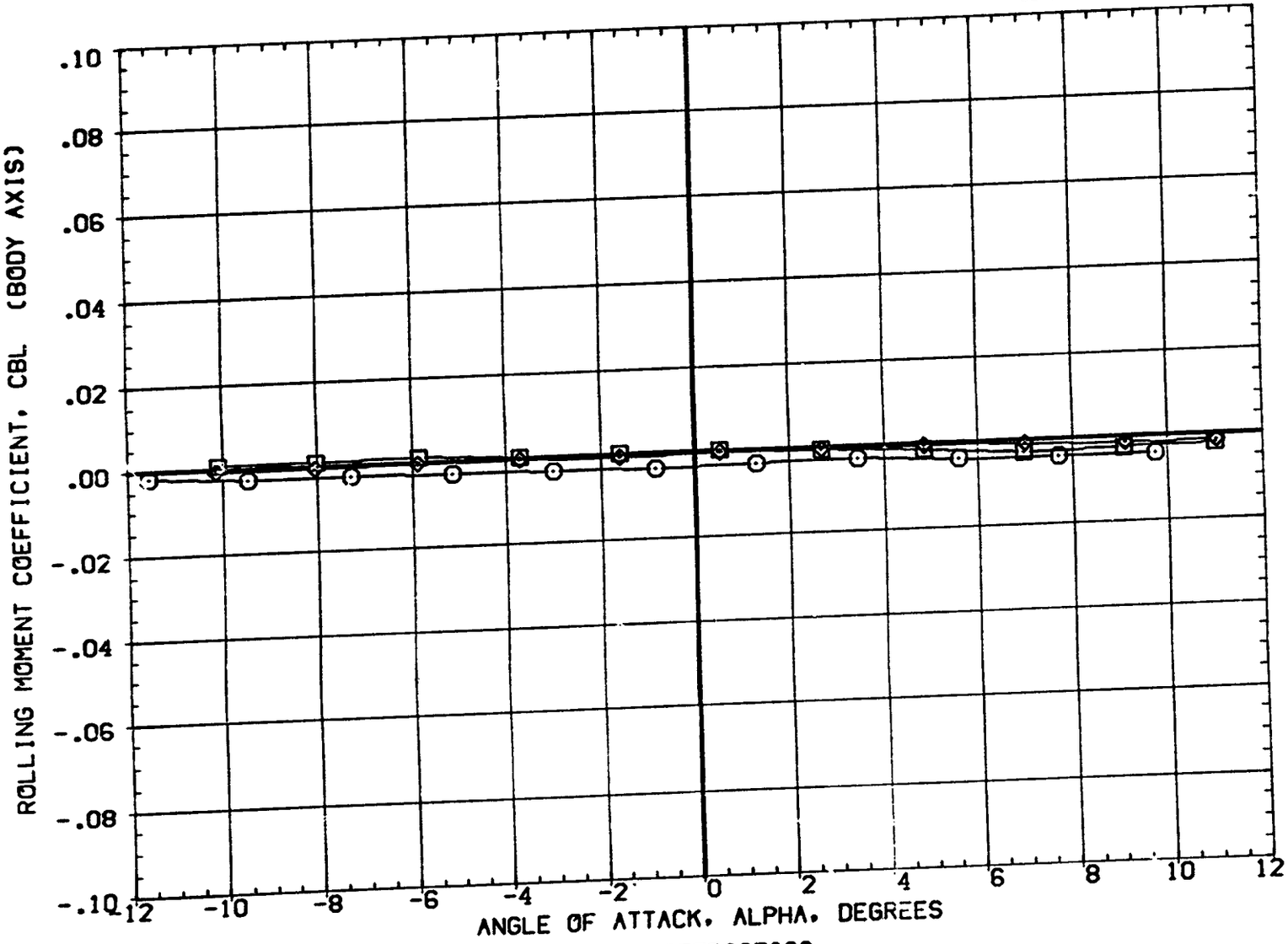
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAV
(B90000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



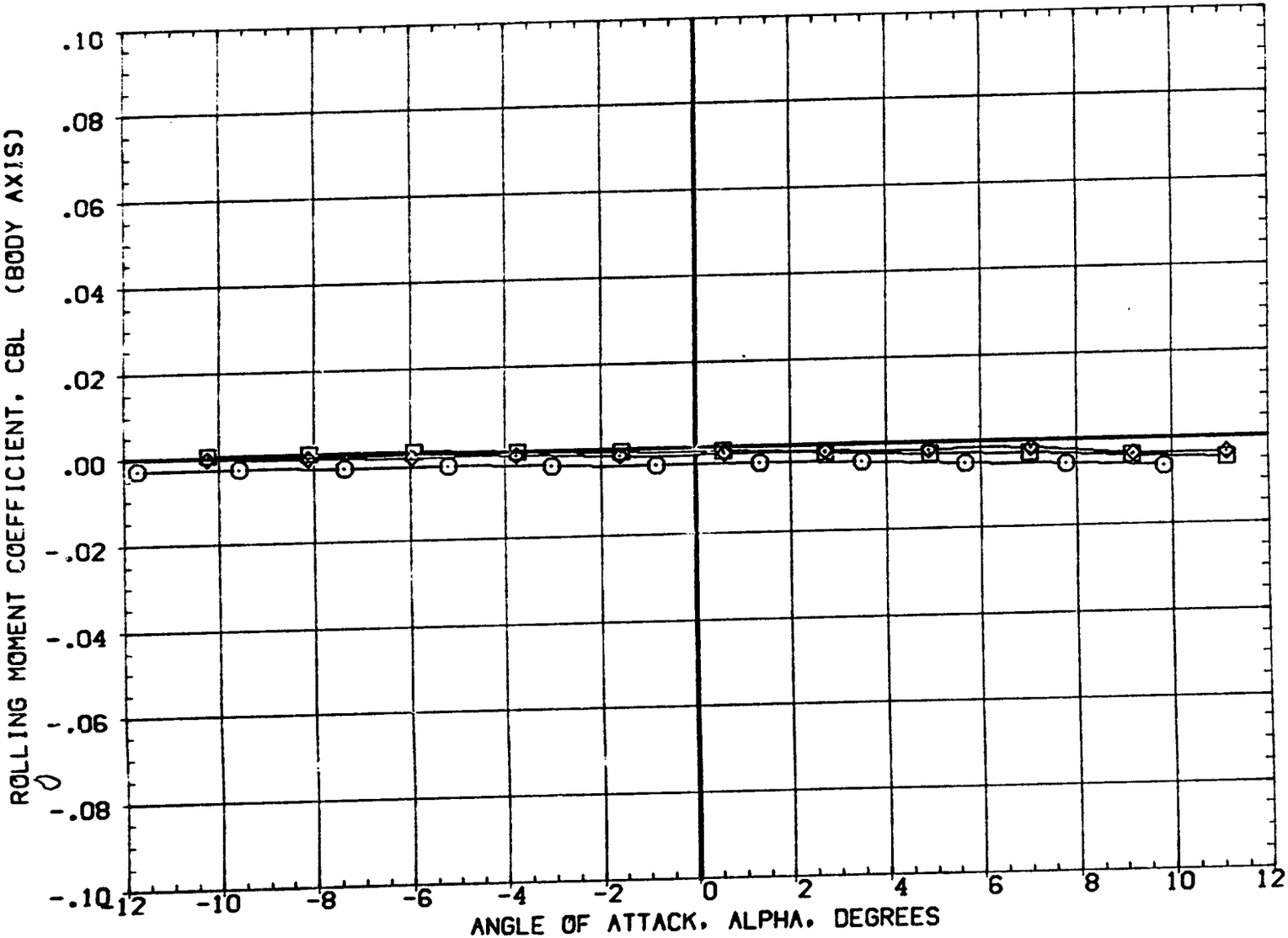
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90300)	□	MSFC 573(IA3)FC) (03)(T9)(S3)	.500	.140	
(B90300)	◇	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90301)	◇	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



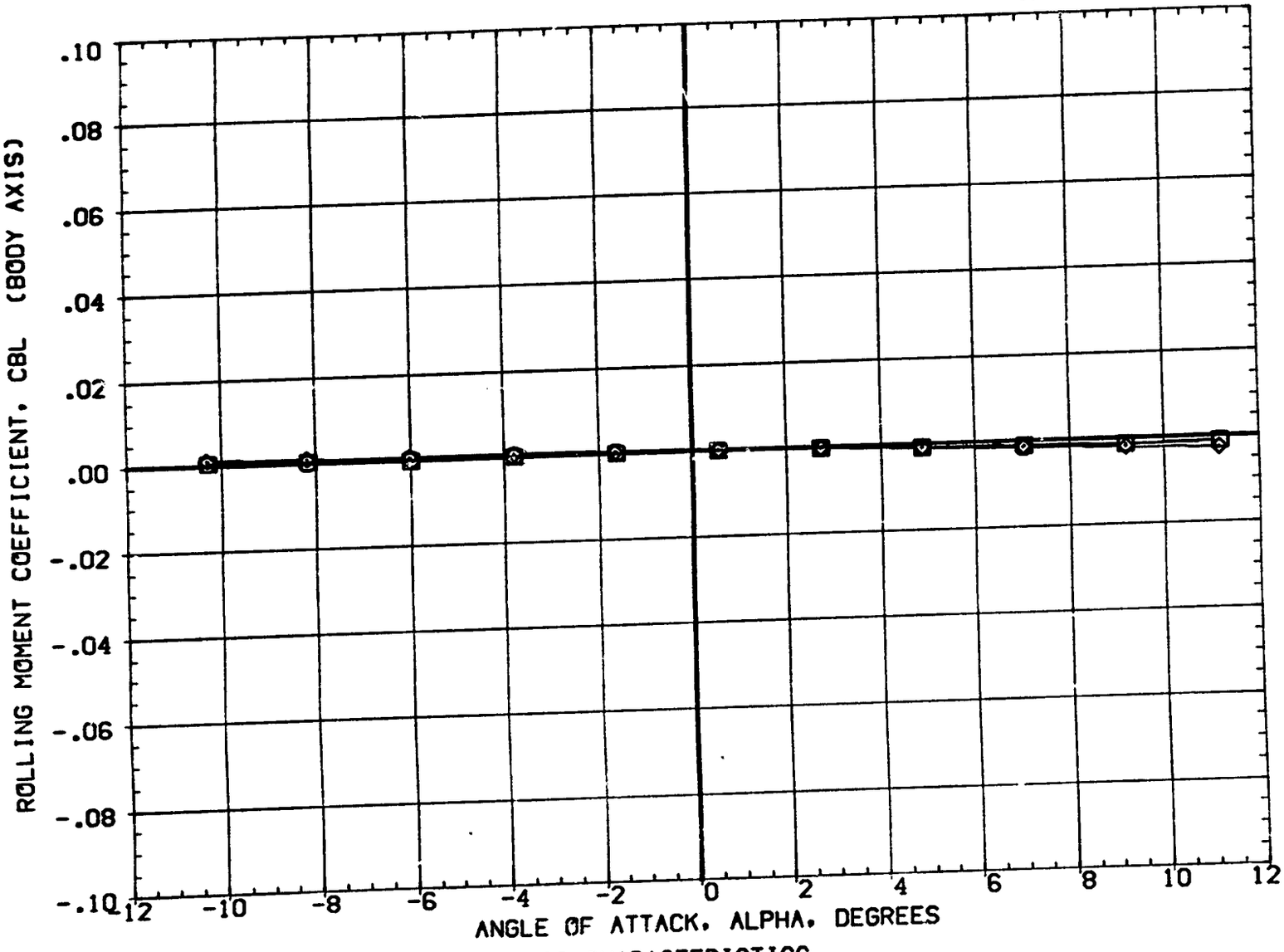
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBYAW
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90300) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90301) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



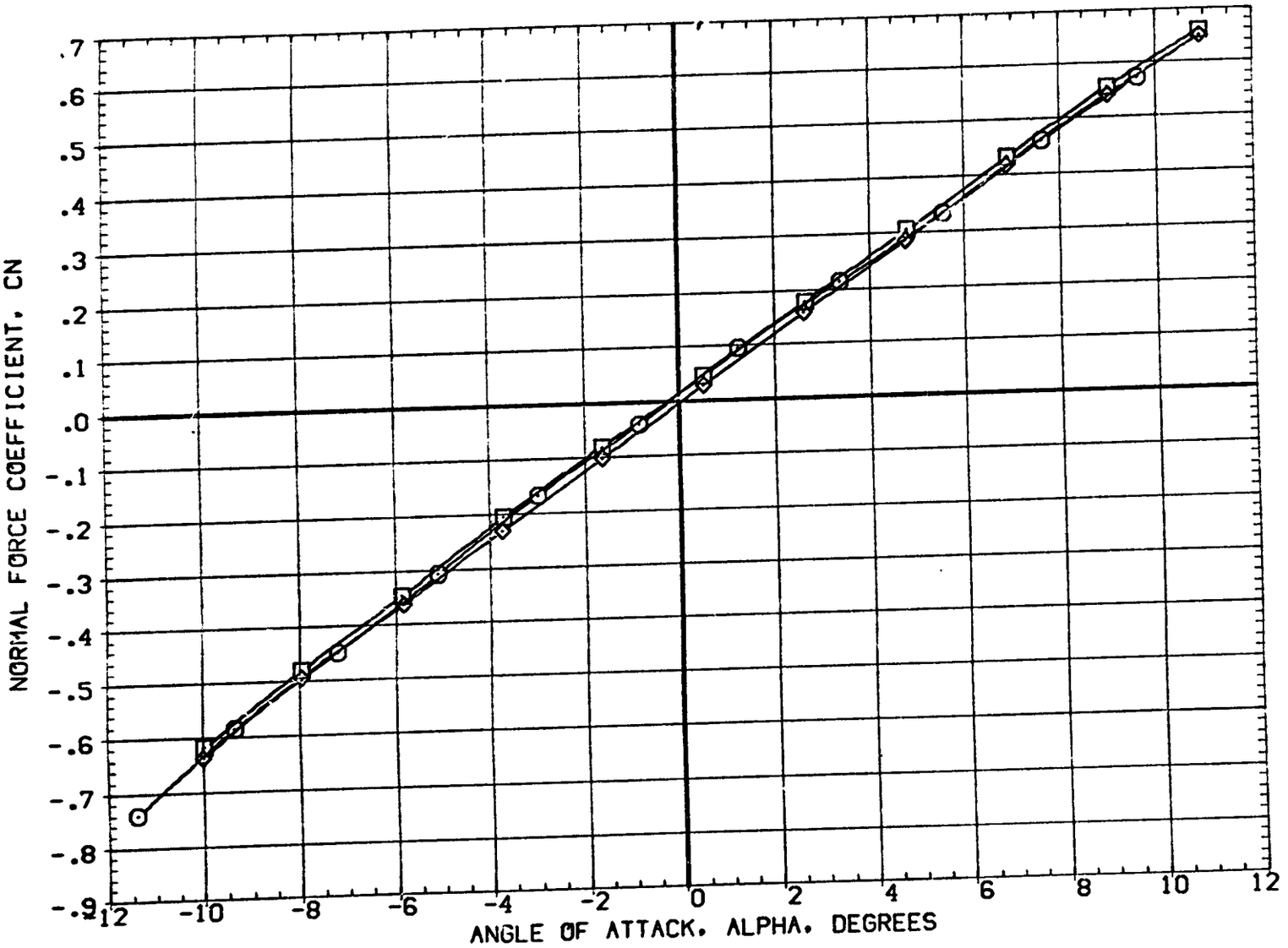
EFFECT OF SRB YAW ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



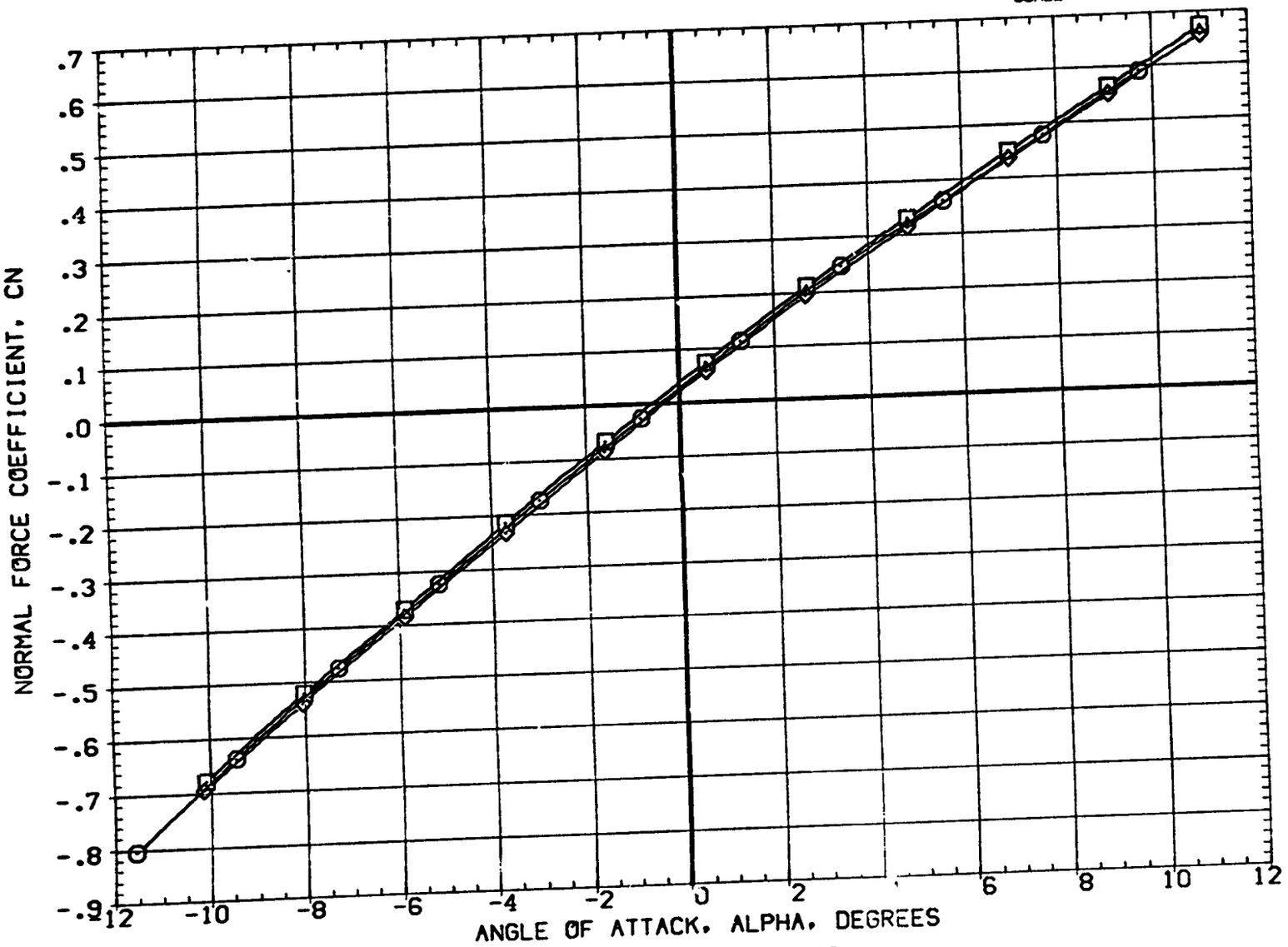
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

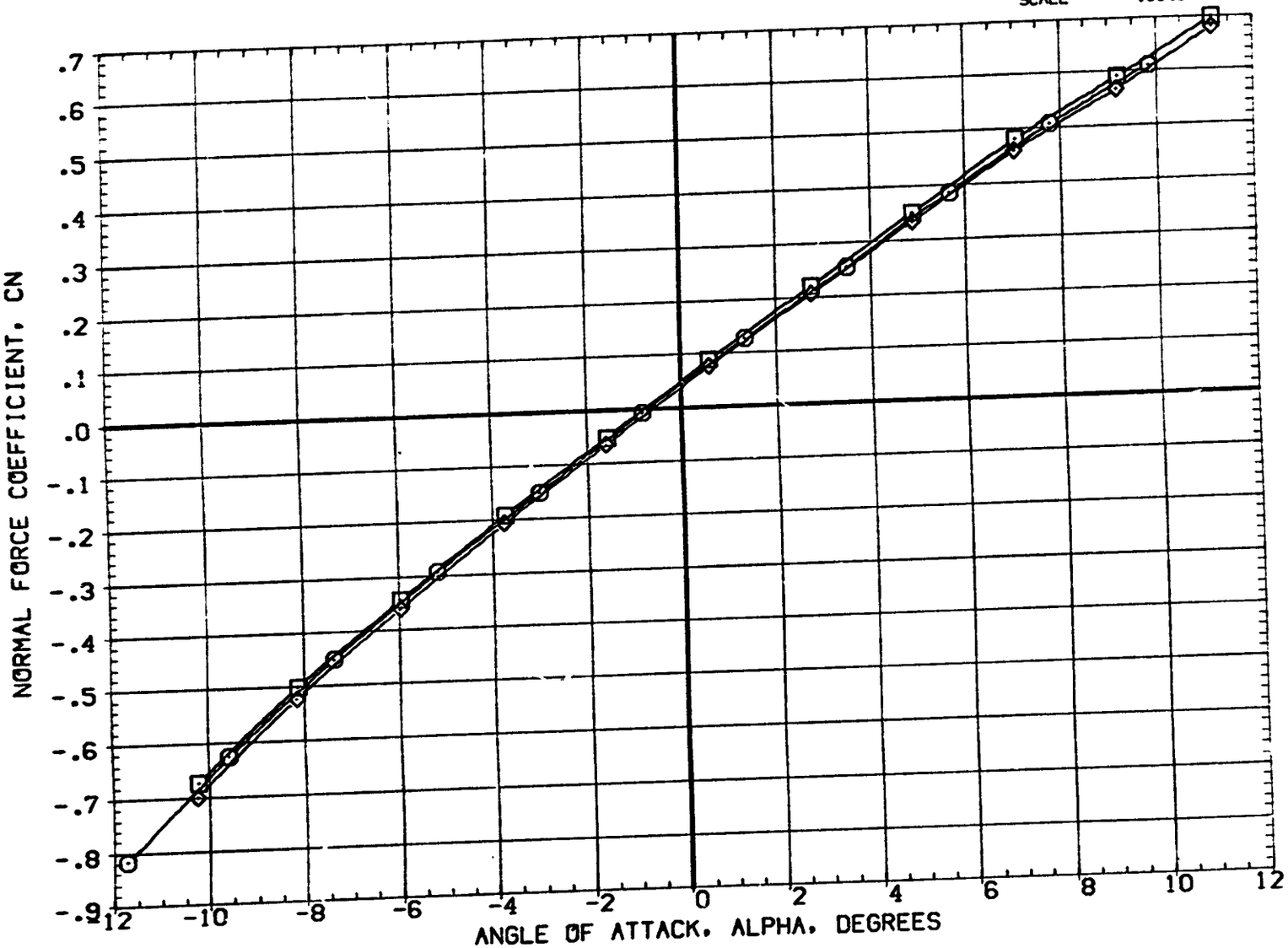


EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	MSFC 573(IA3IFC) (03)(T9)(S3)	.500	.140	
(890401)	MSFC 573(IA3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	MSFC 573(IA3IFC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



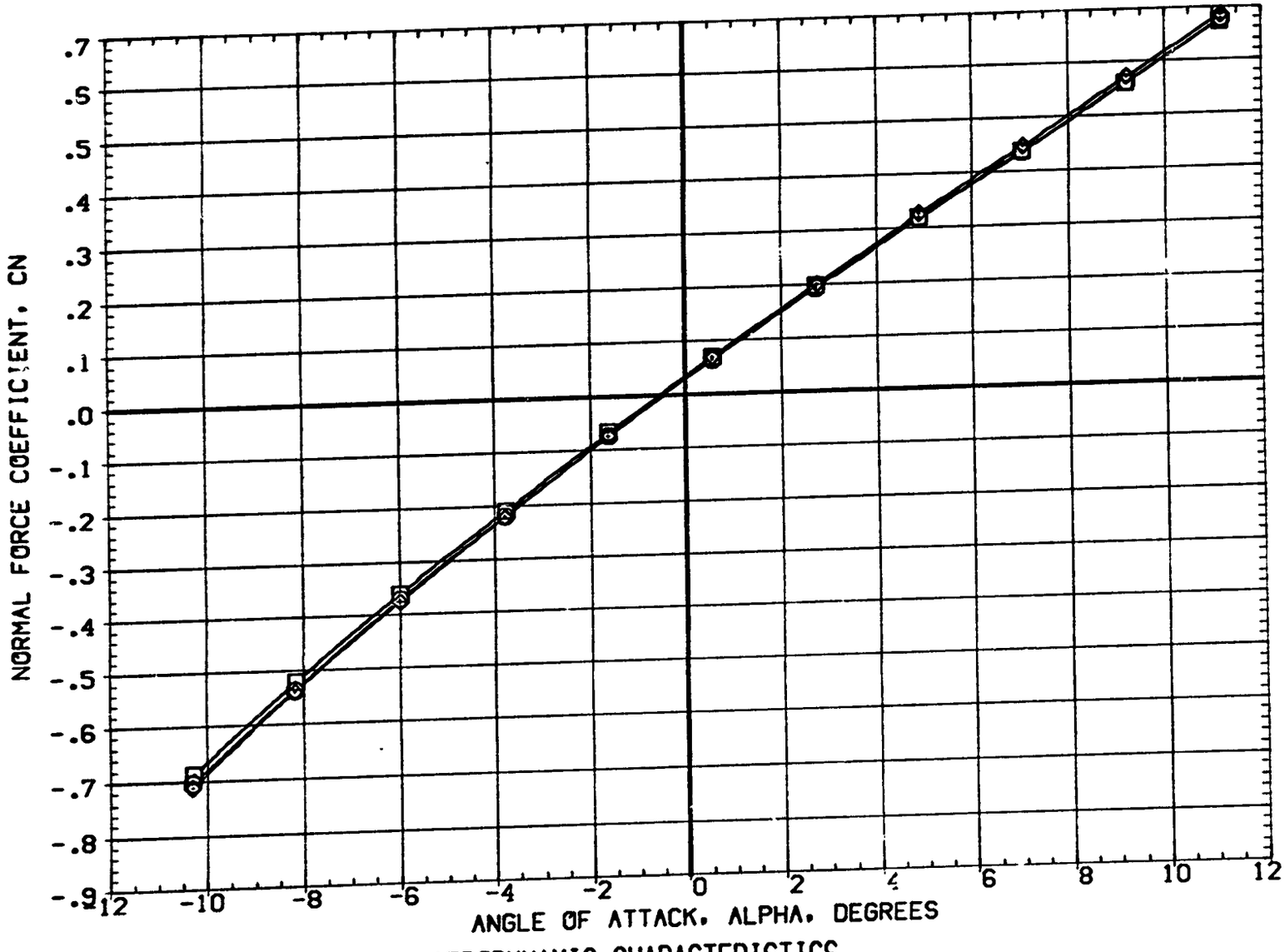
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



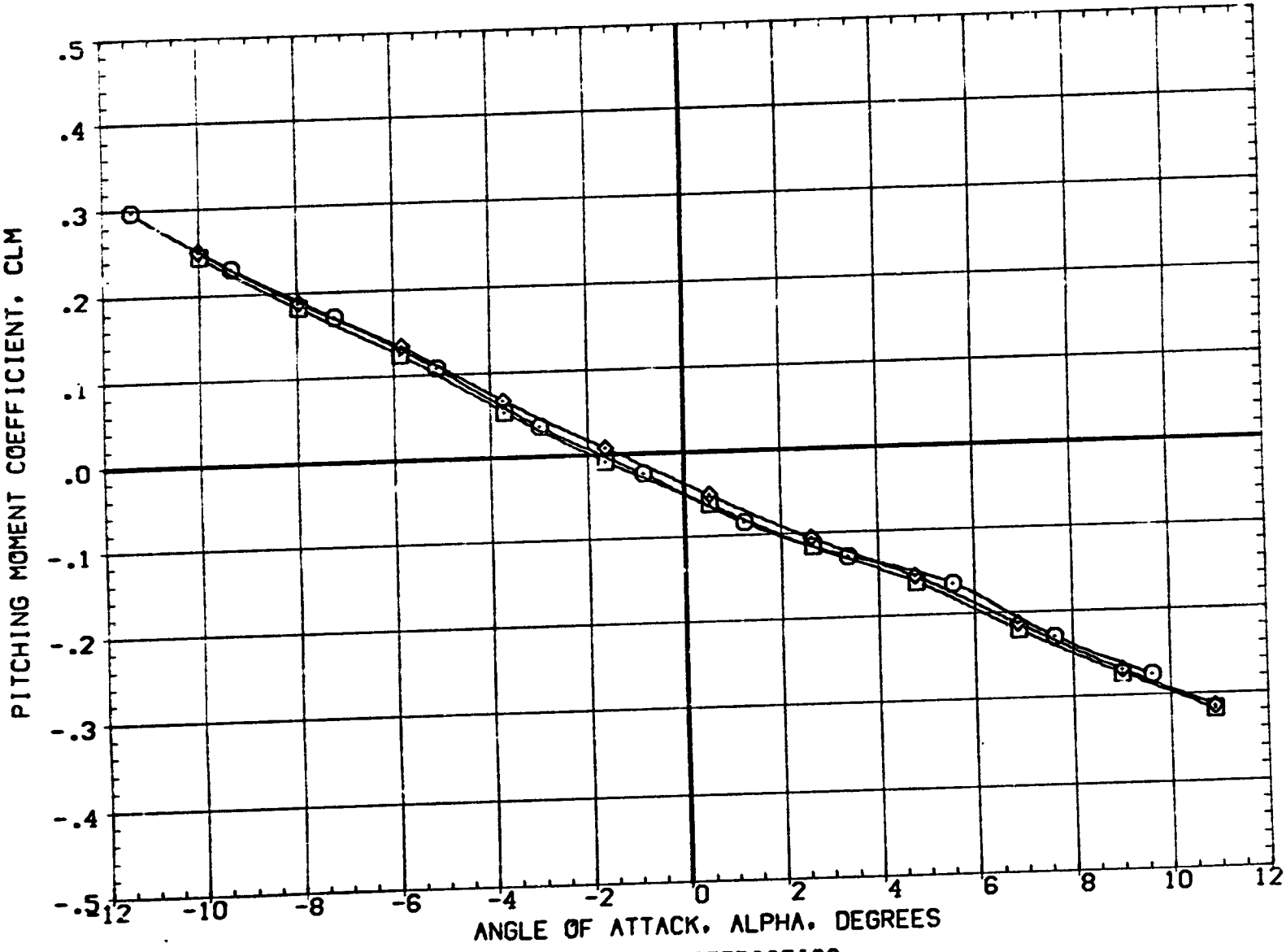
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	□	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	◇	MSFC 573(1A31FC) (03)(T9)(S3; SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



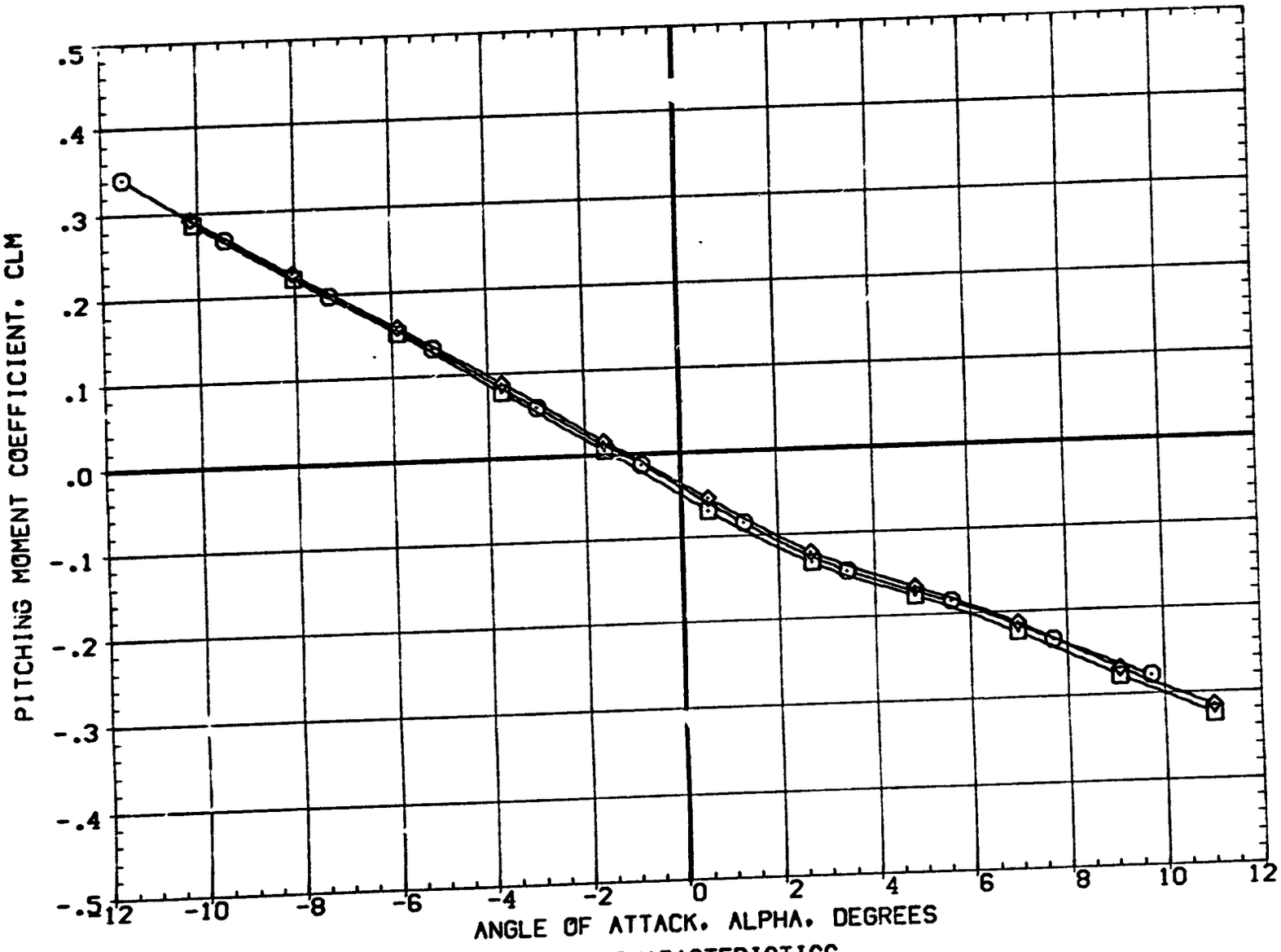
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	MSFC 573(IA3)FC) (03)(T9)(S3)	.500	.140	
(B90401)	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	MSFC 573(IA3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



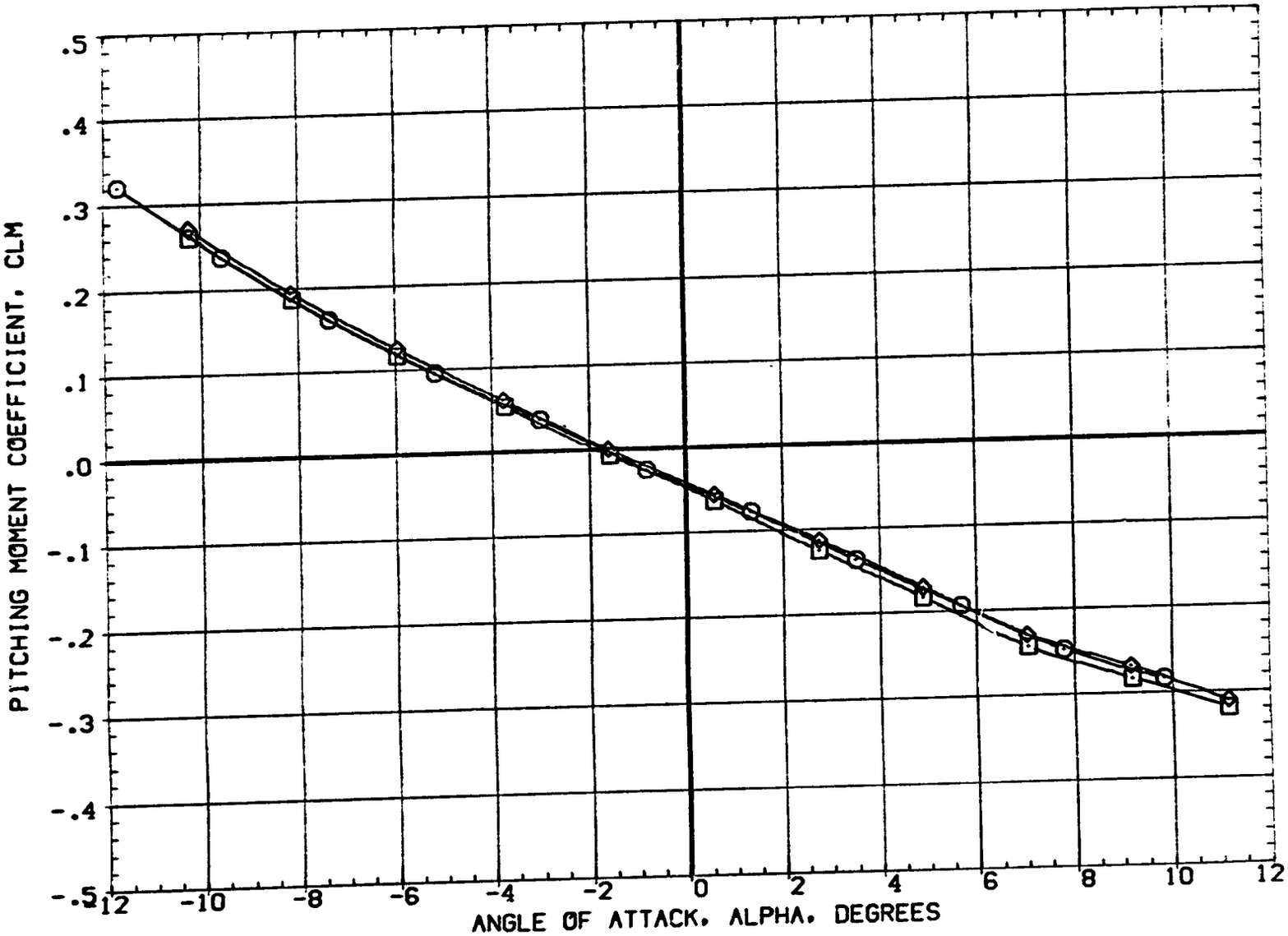
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONF'GURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



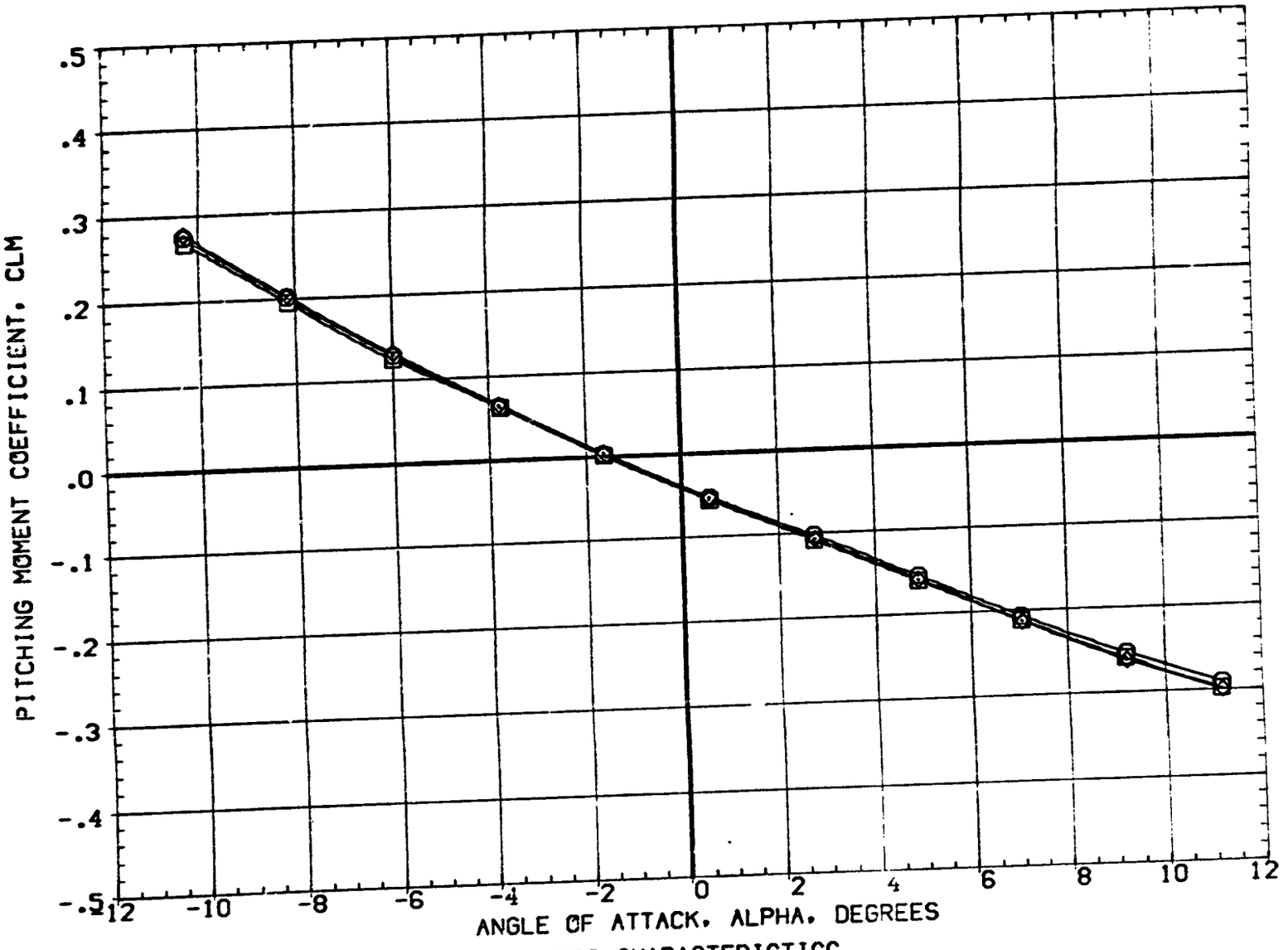
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



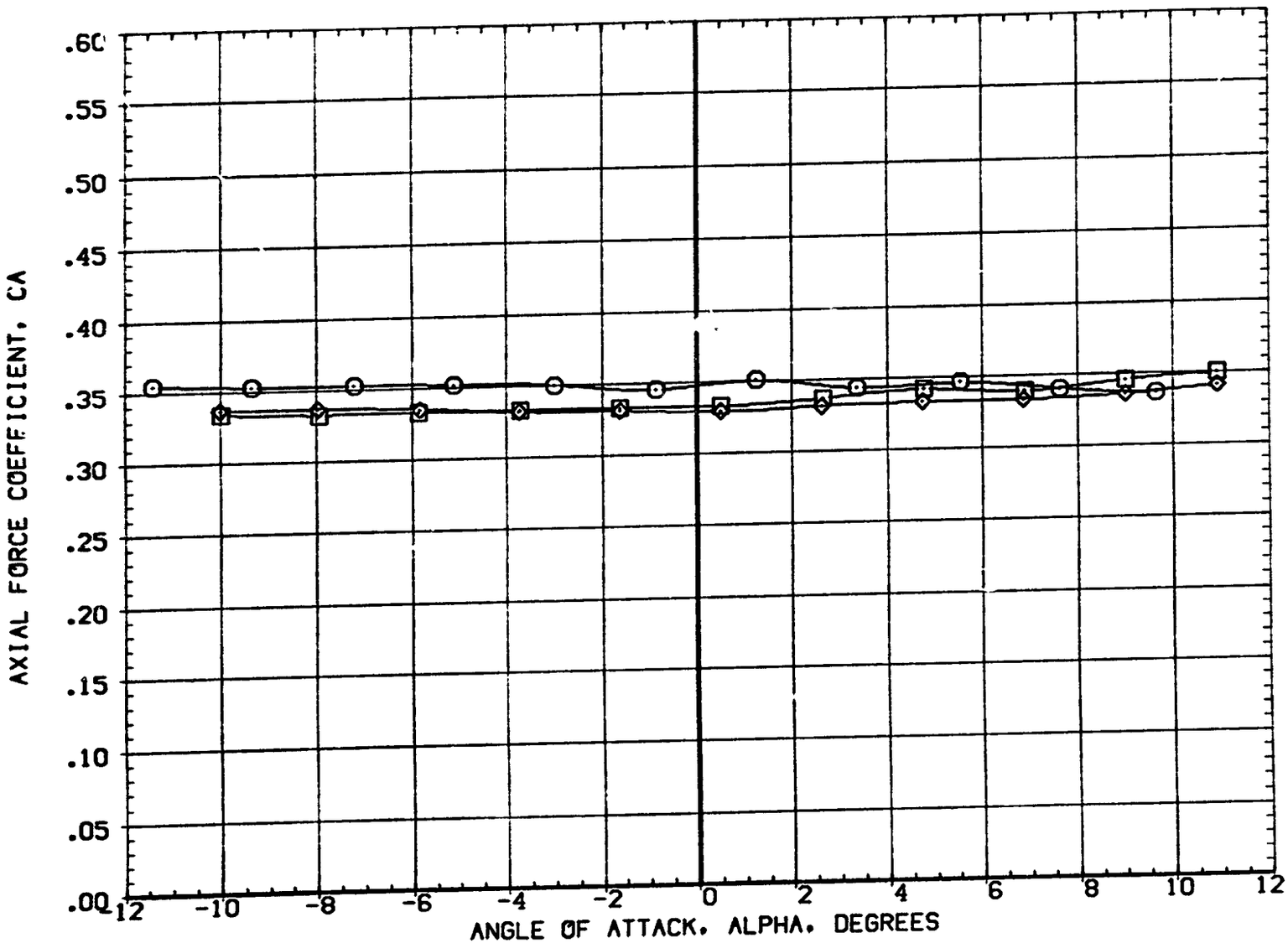
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



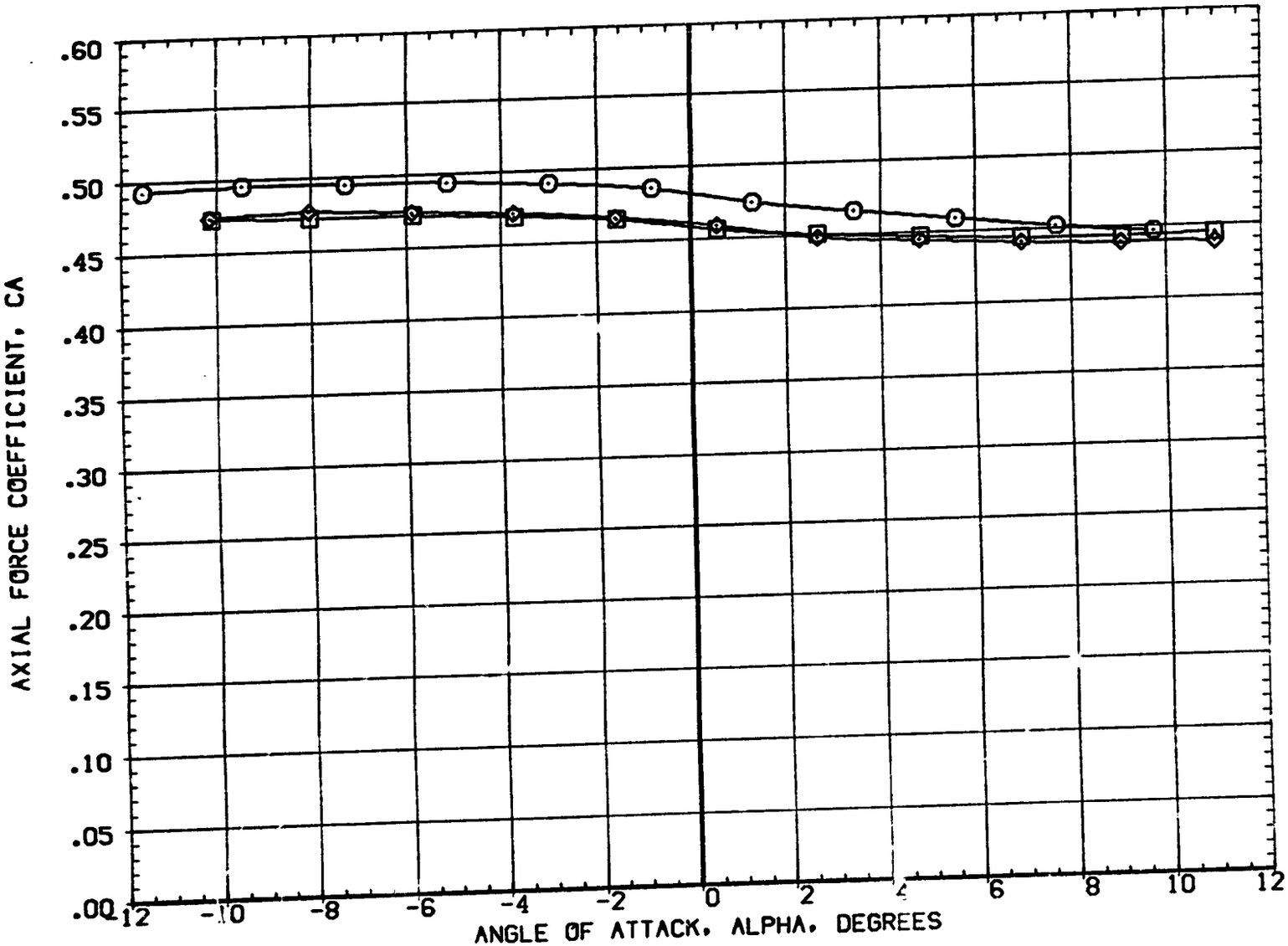
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



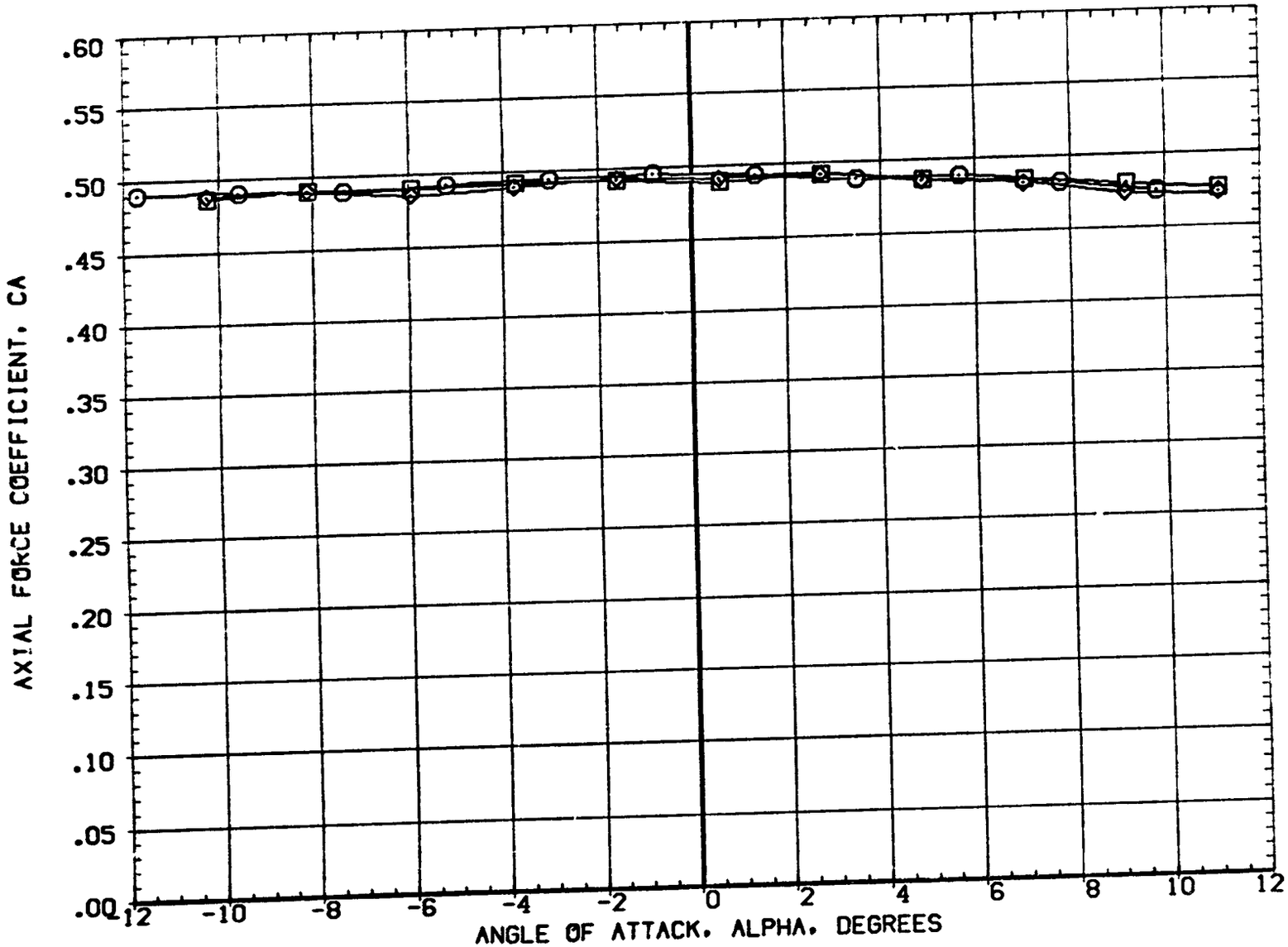
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



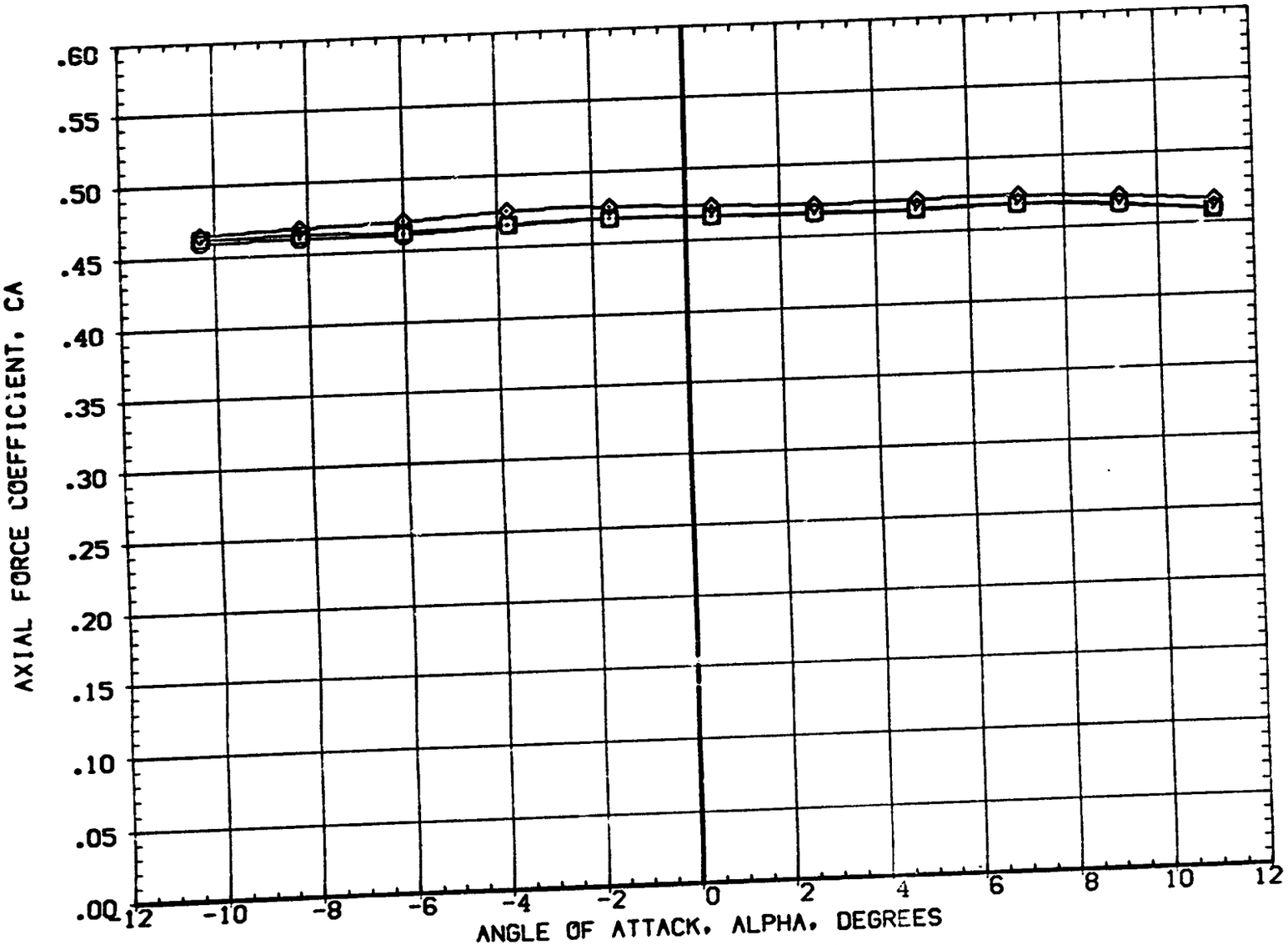
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90401)	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90402)	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



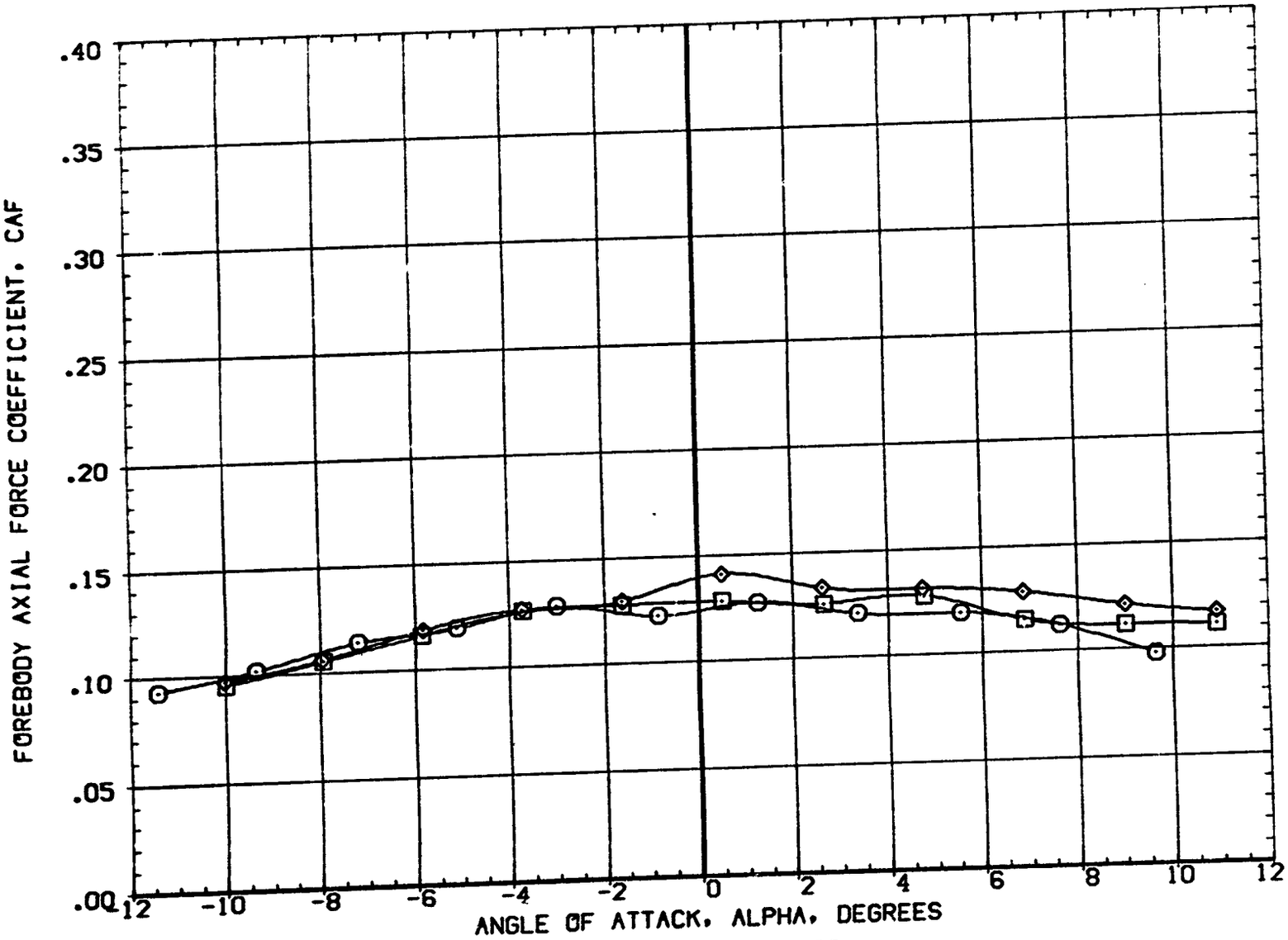
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



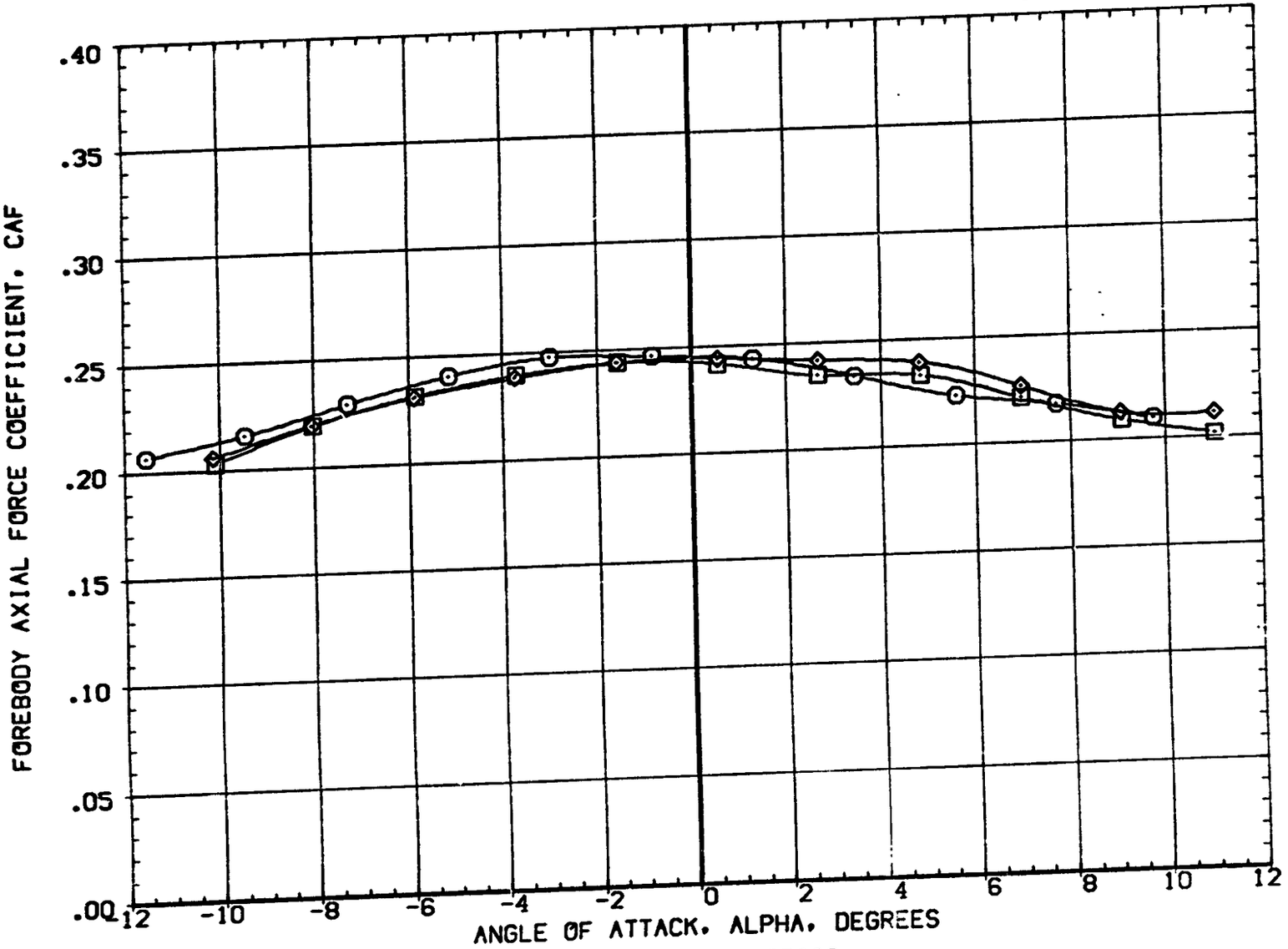
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



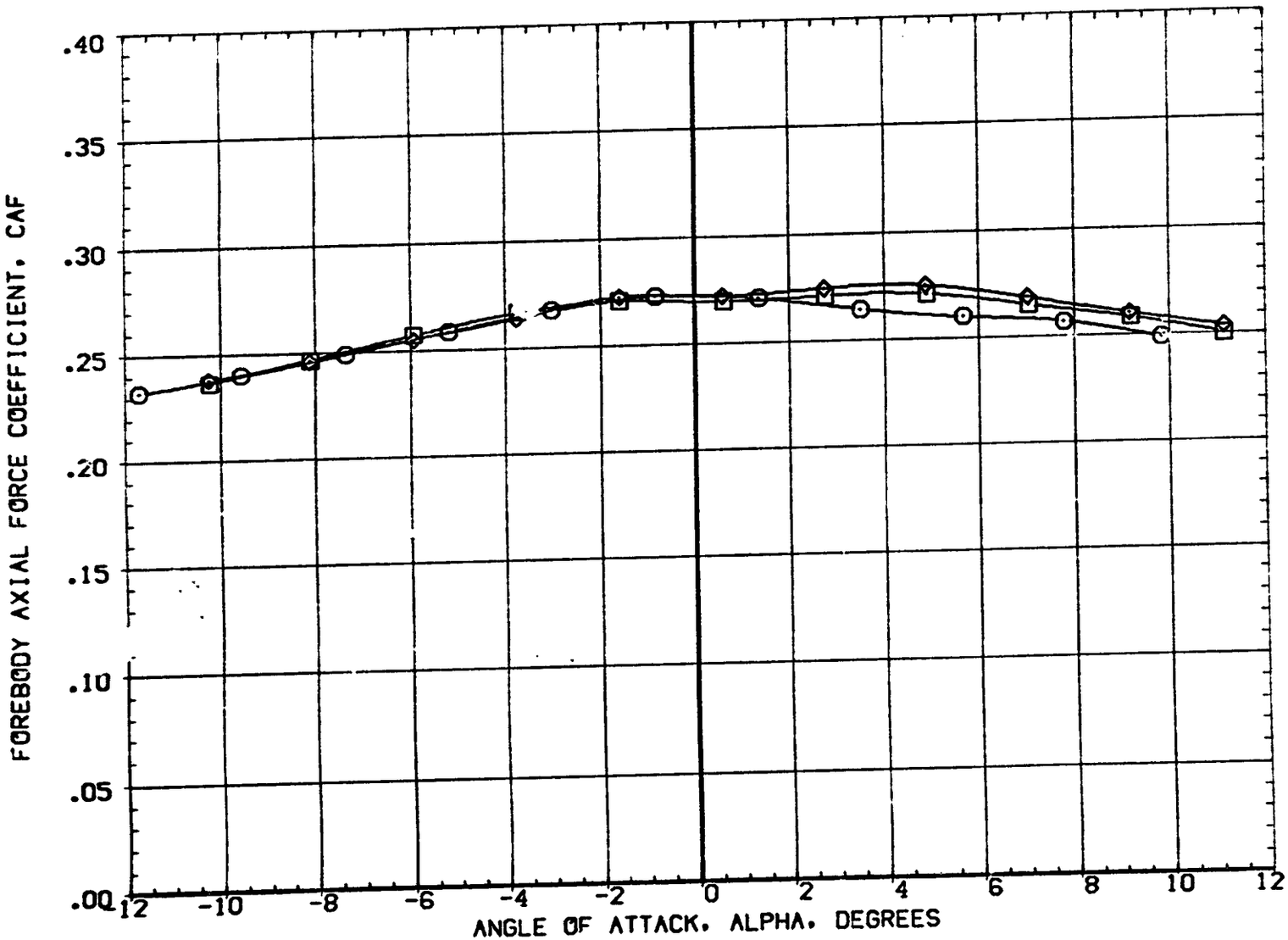
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B9000C)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B9040L)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



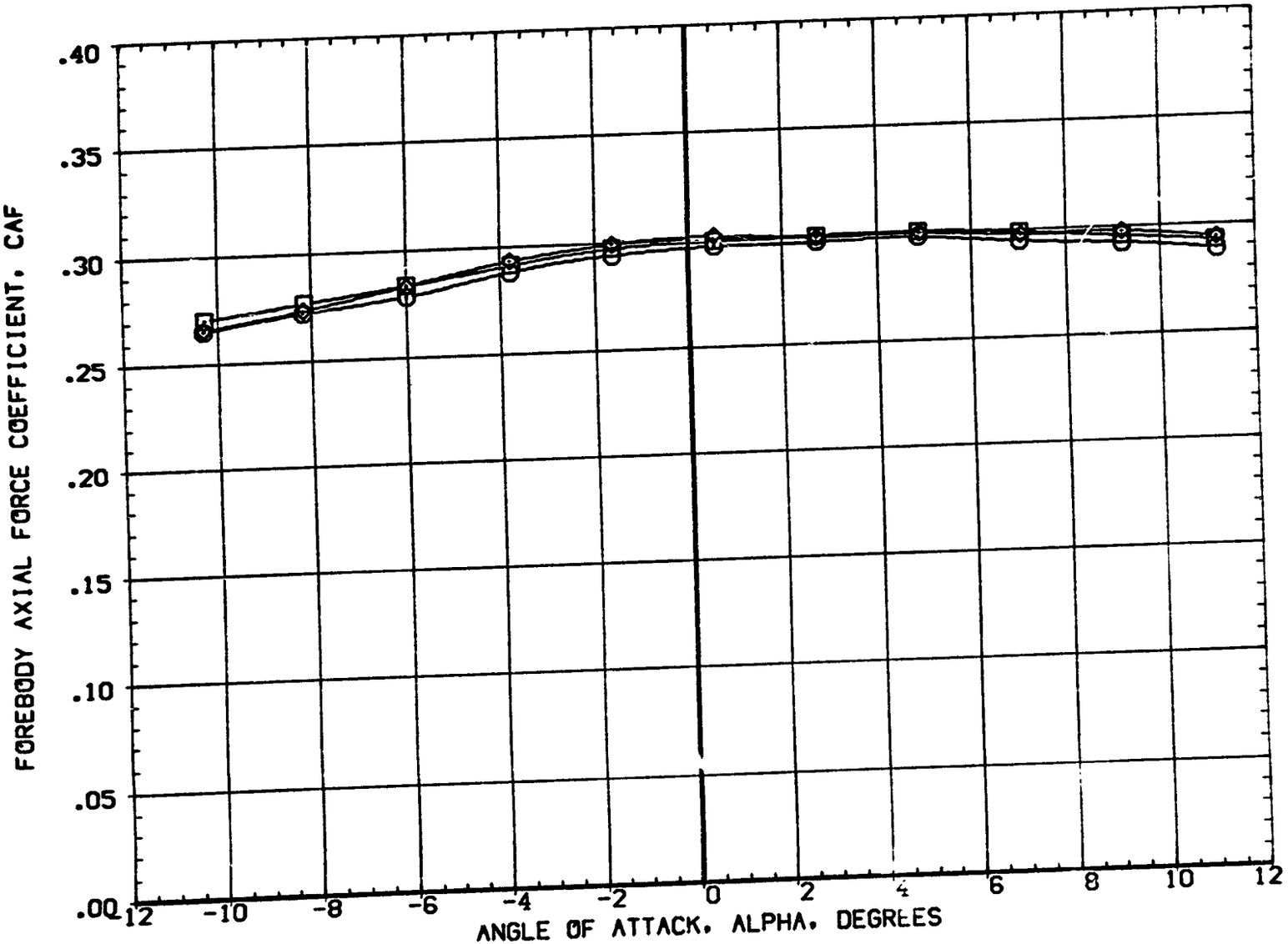
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



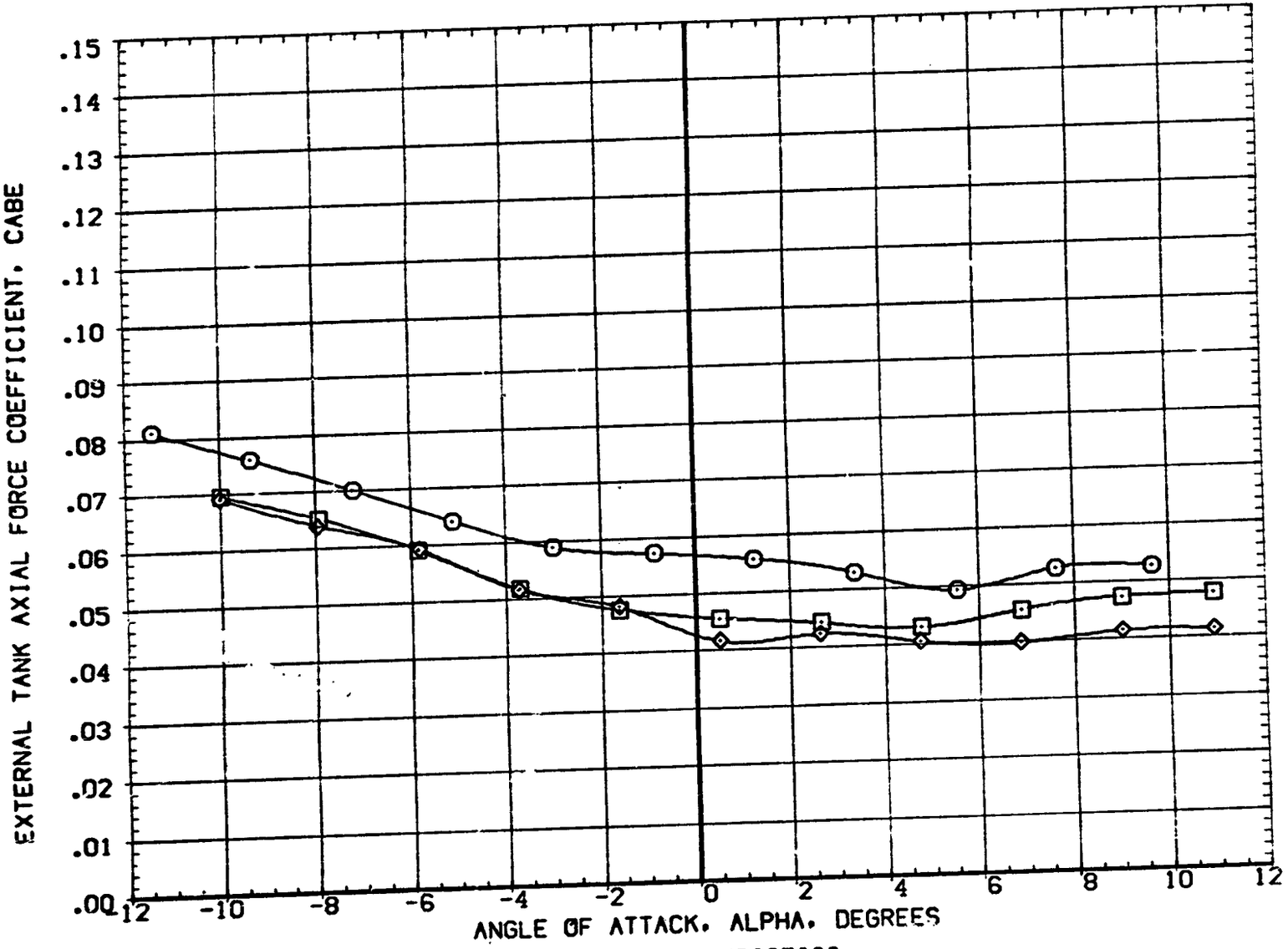
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



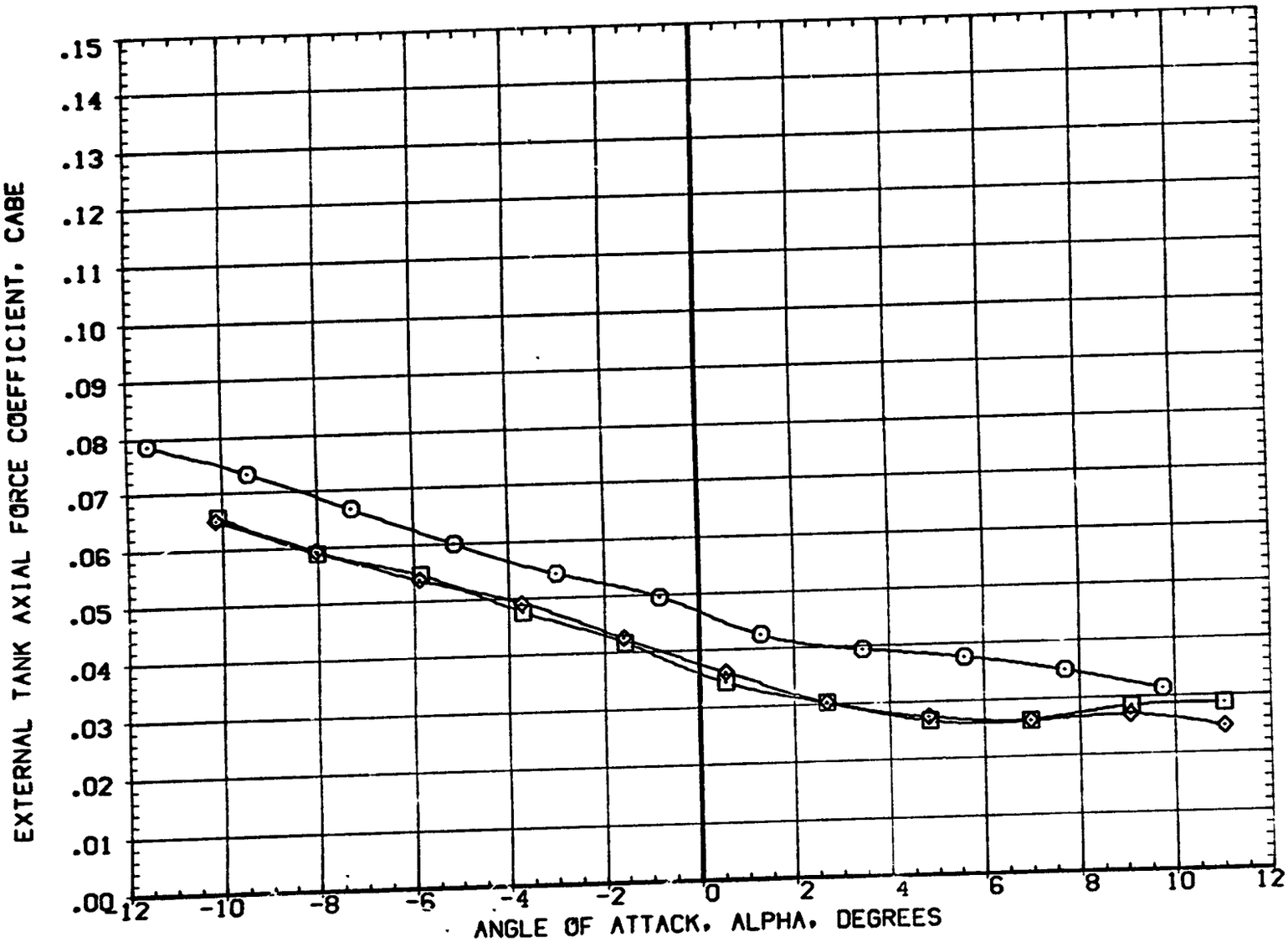
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



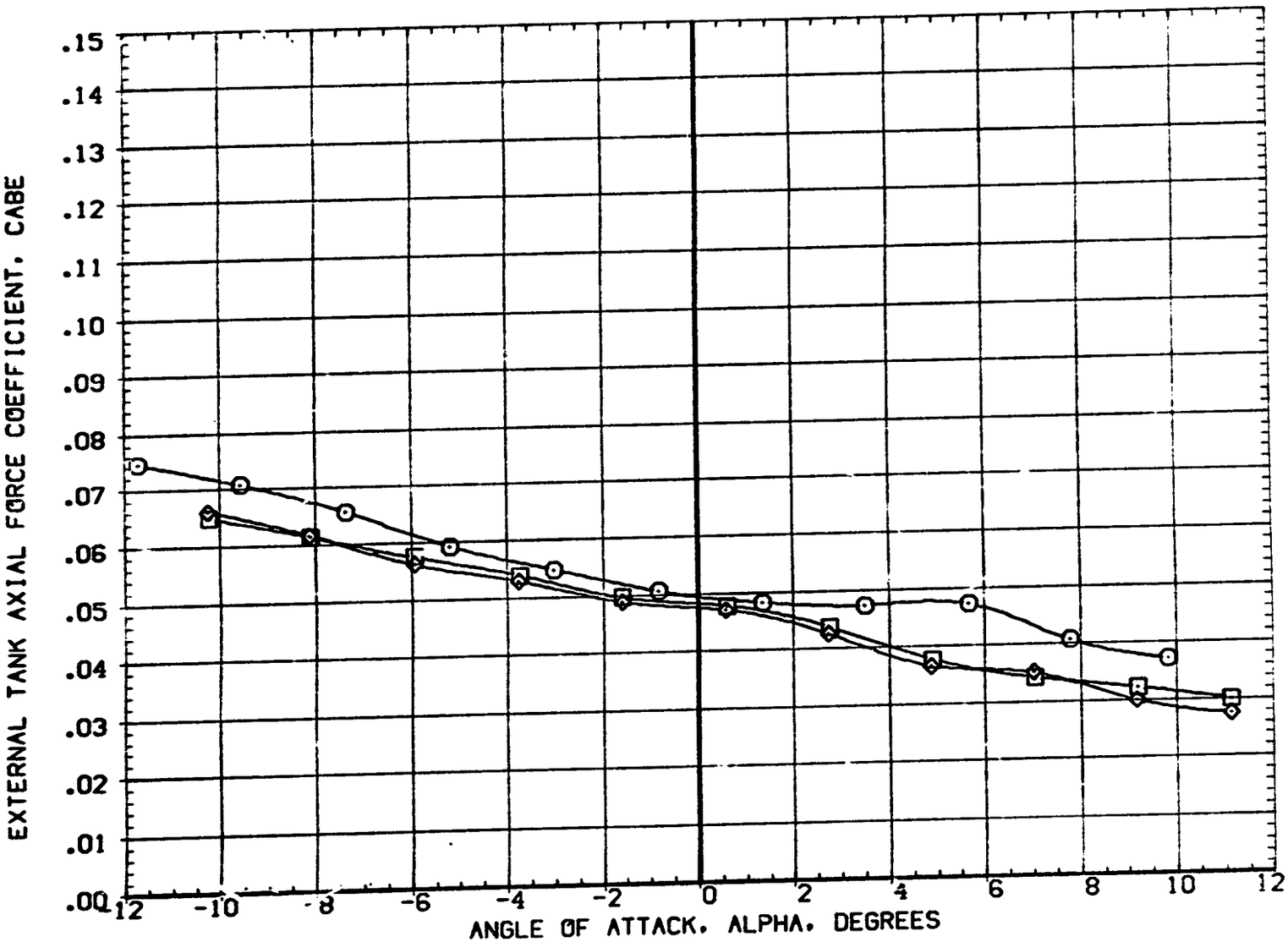
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



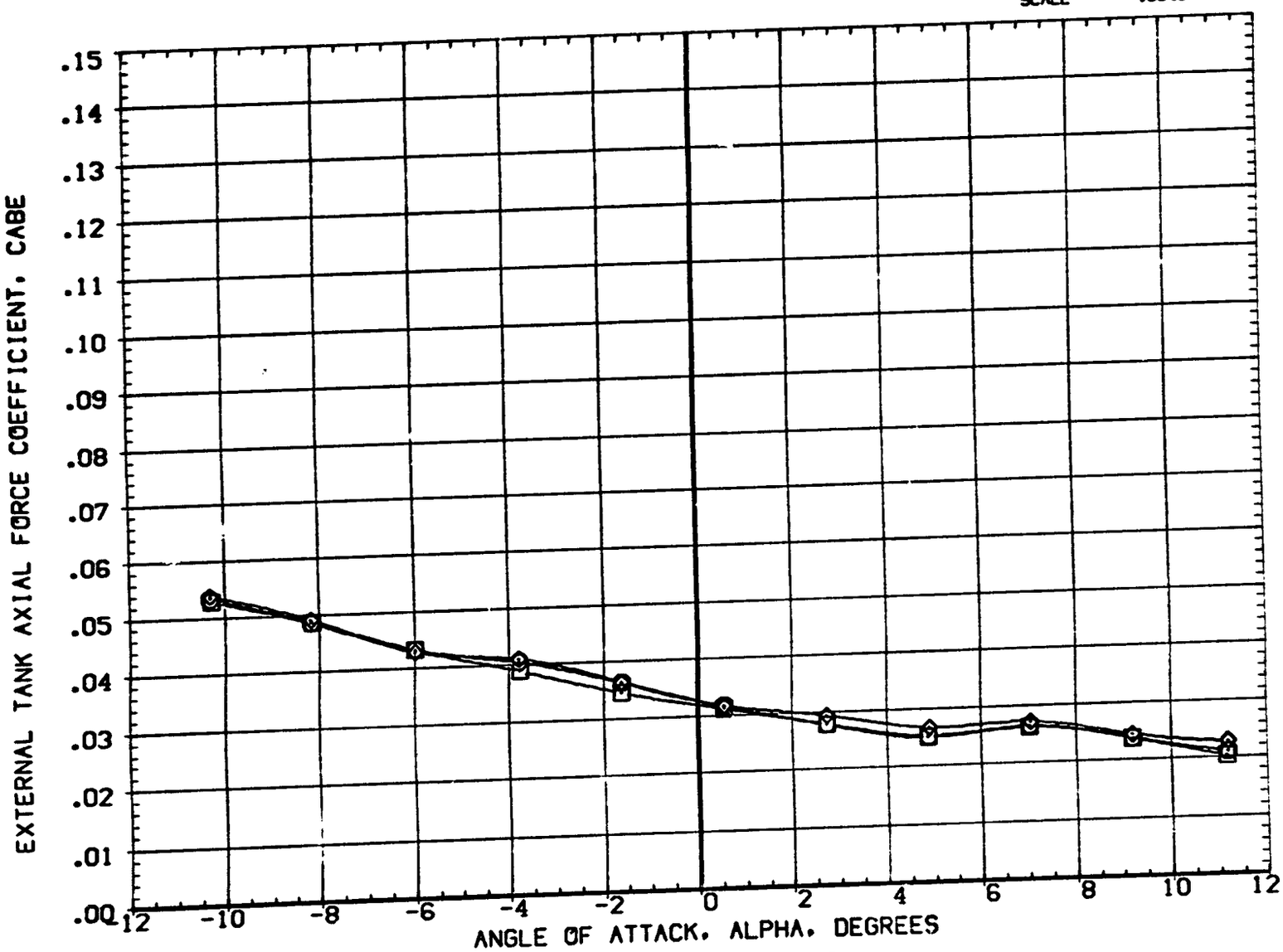
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



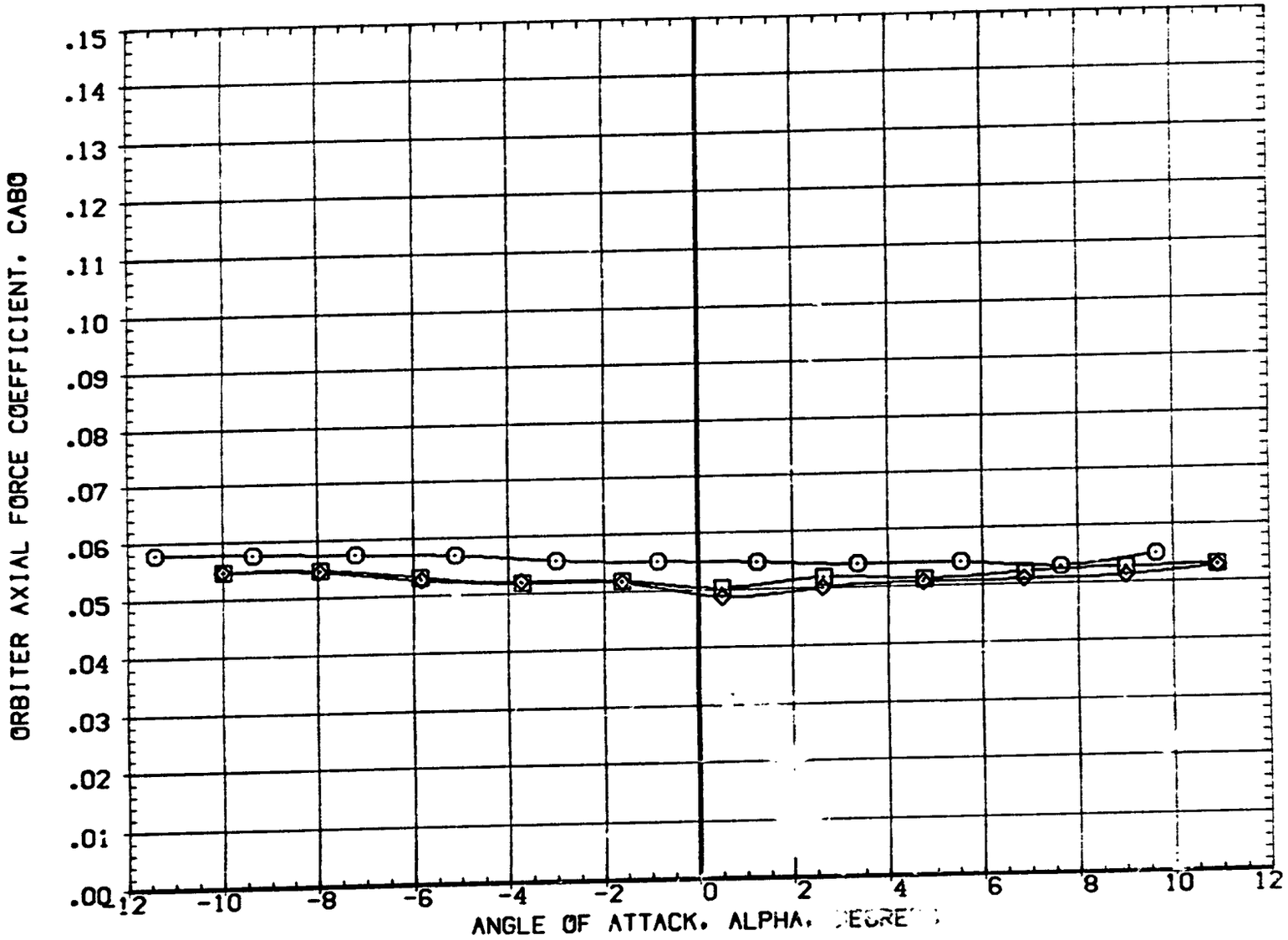
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



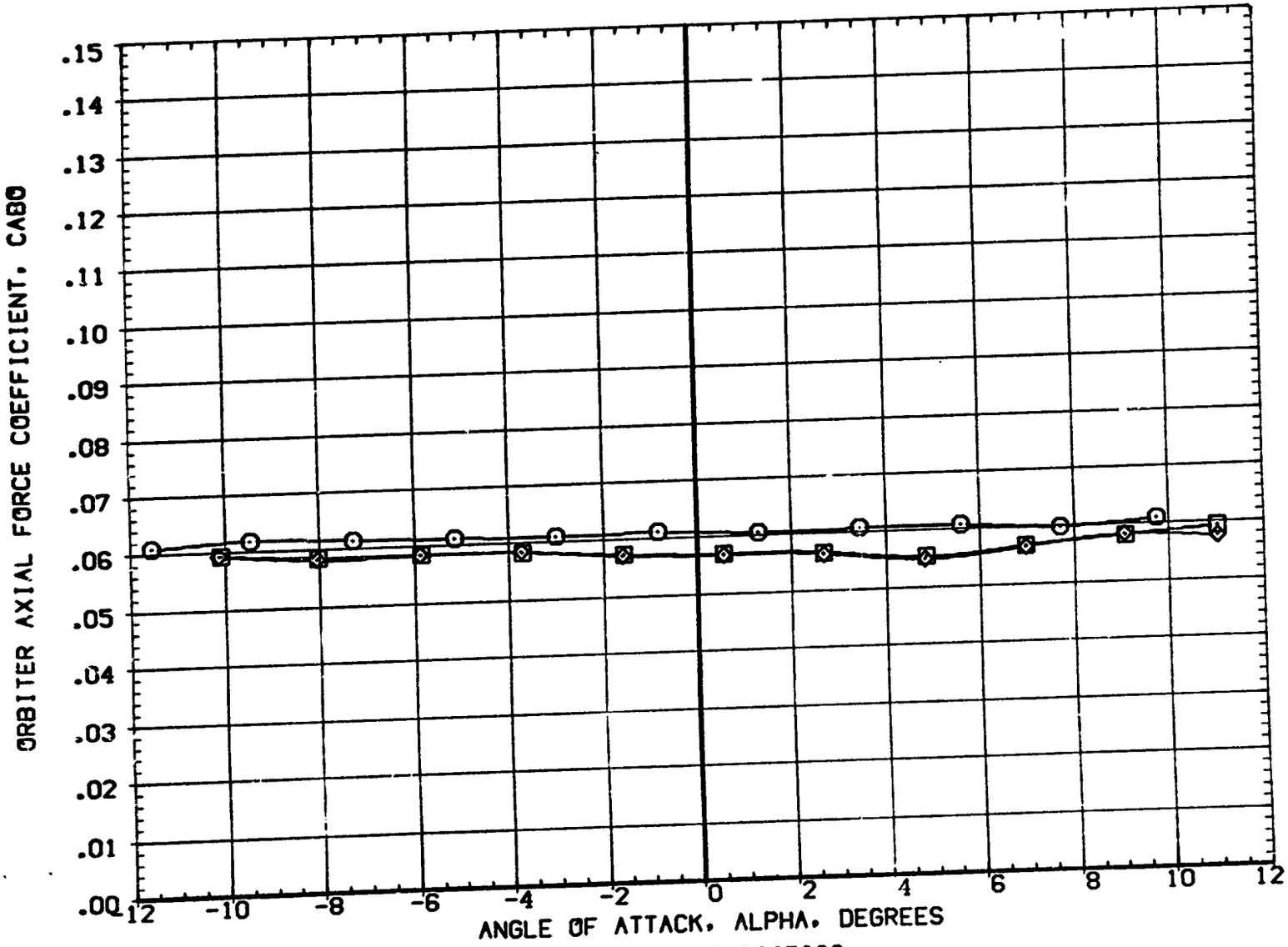
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B9040!)	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



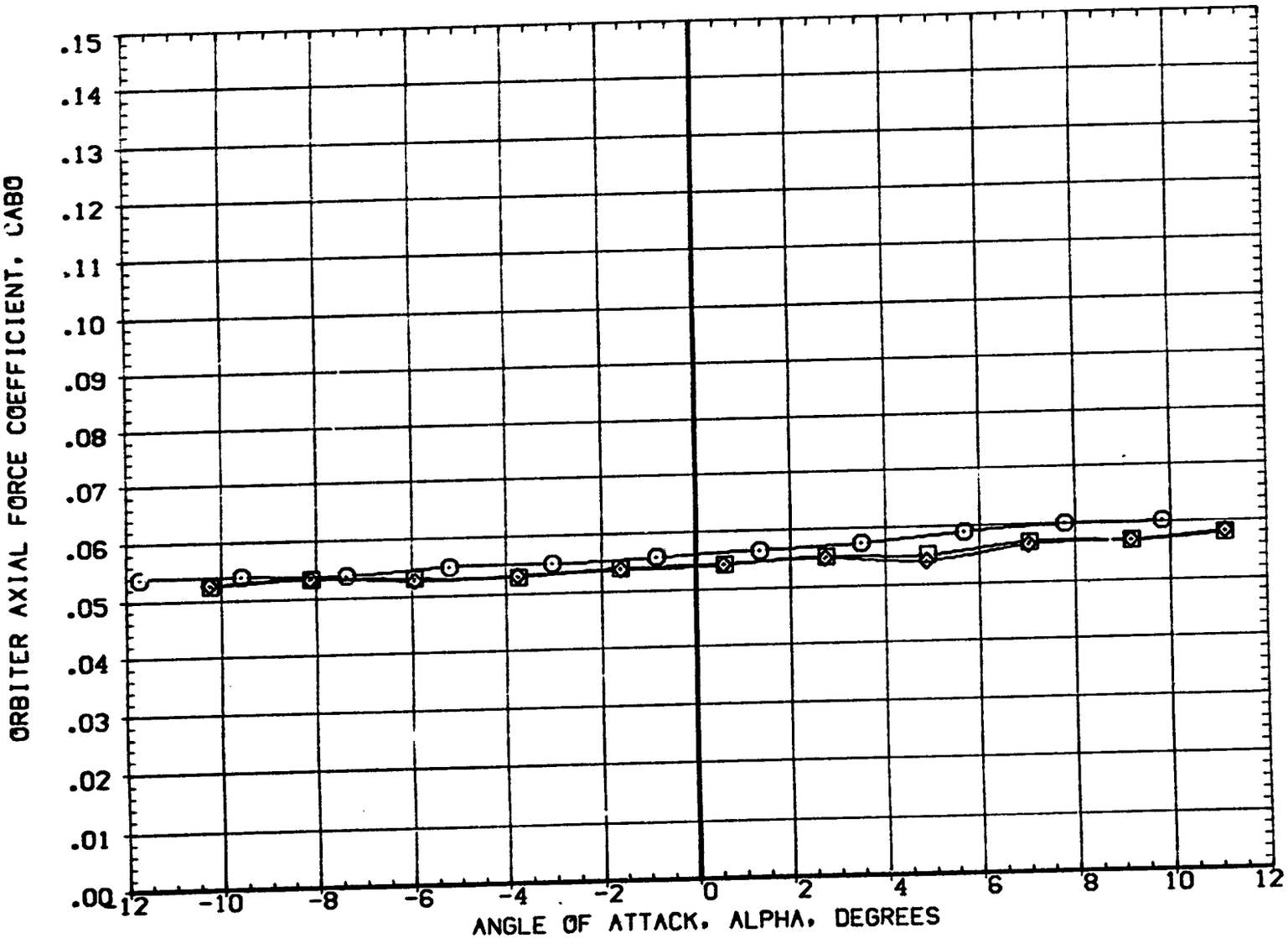
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



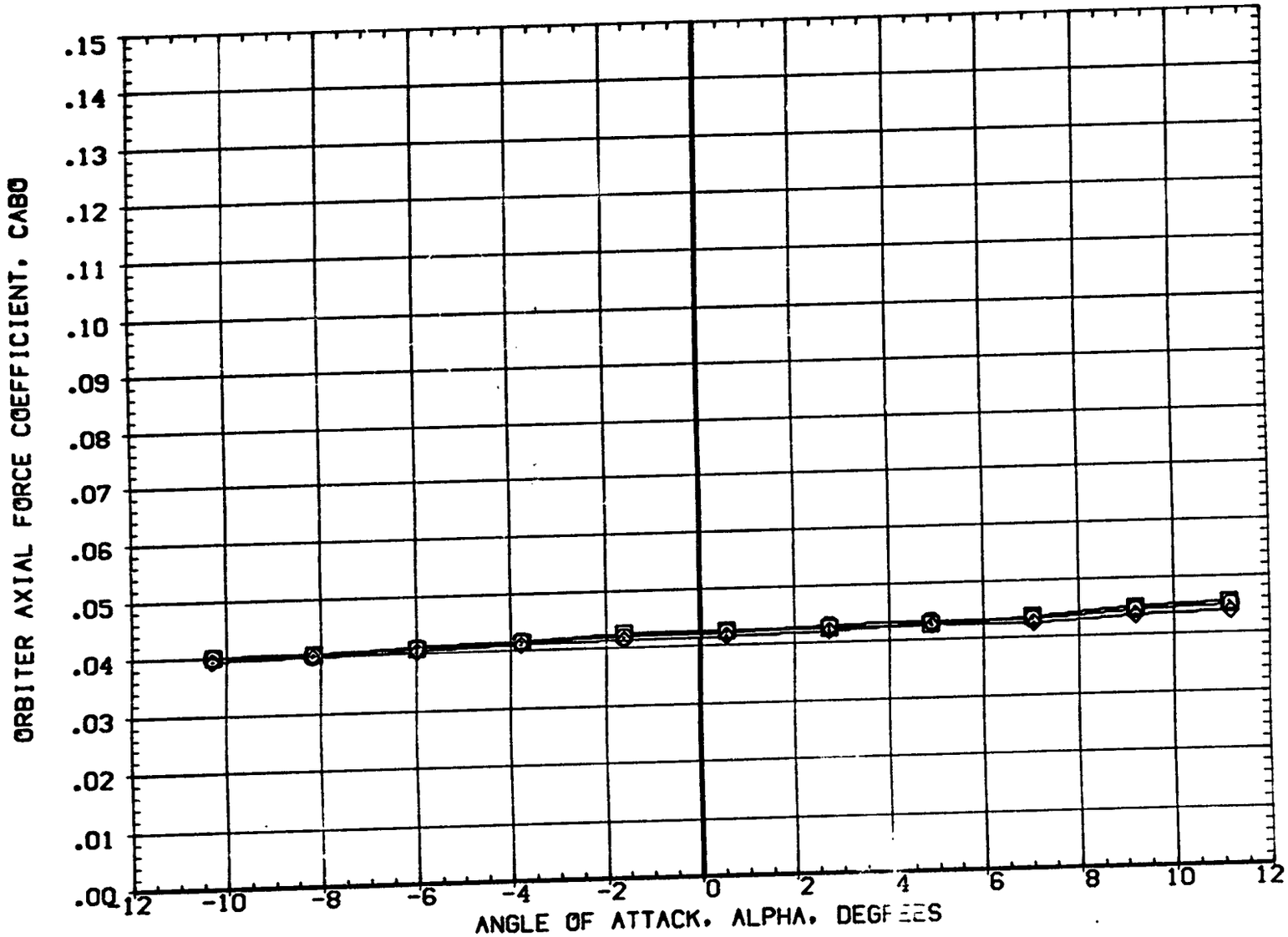
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



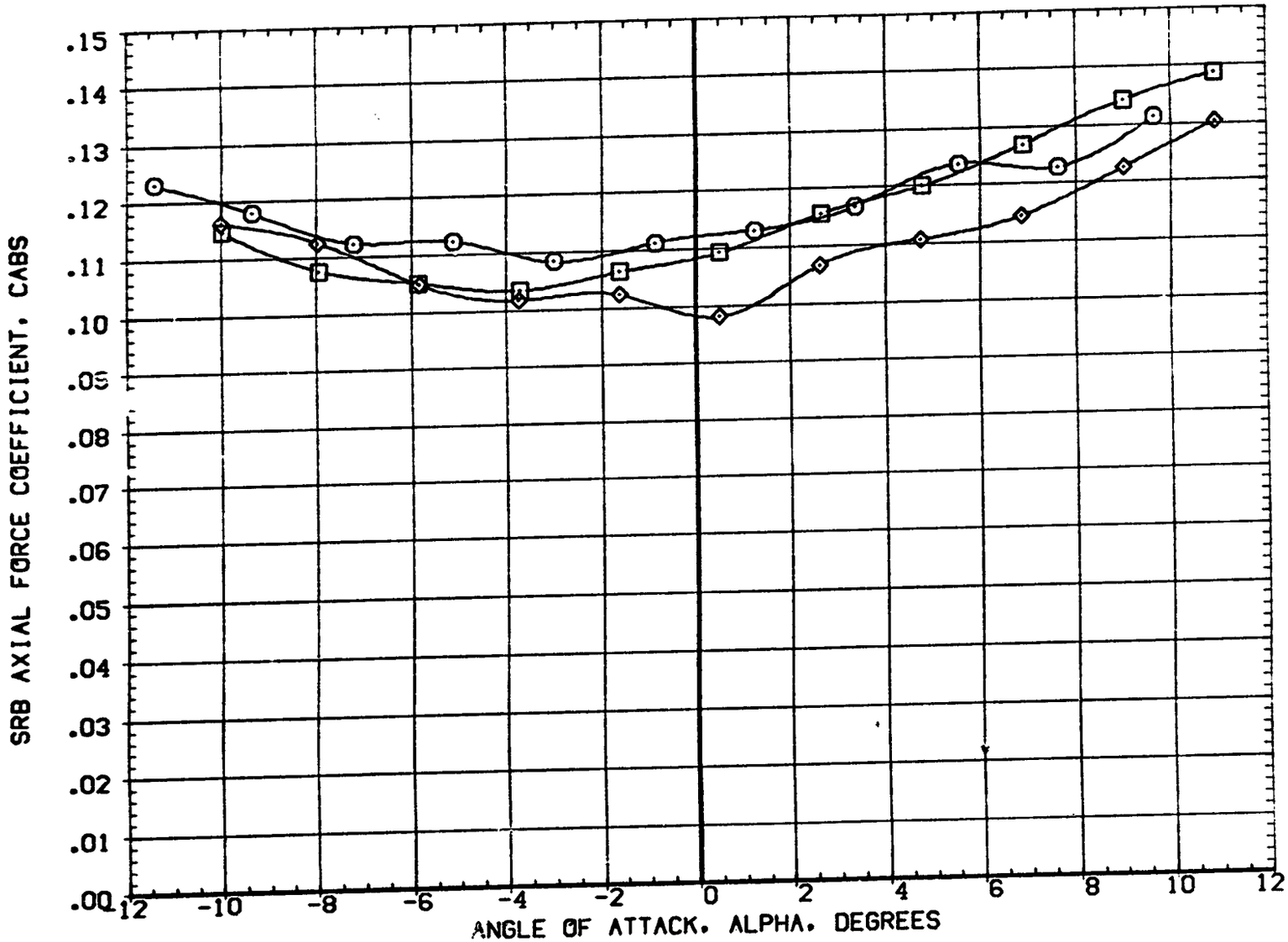
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	□	MSFC 573(A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	◇	MSFC 573(A31FC) (03)(T9)(S3) SRB M(SALNO.	.500	.140	1.000
(B90402)	◇	MSFC 573(A31FC) (03)(T9)(S3) SRB M.SALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

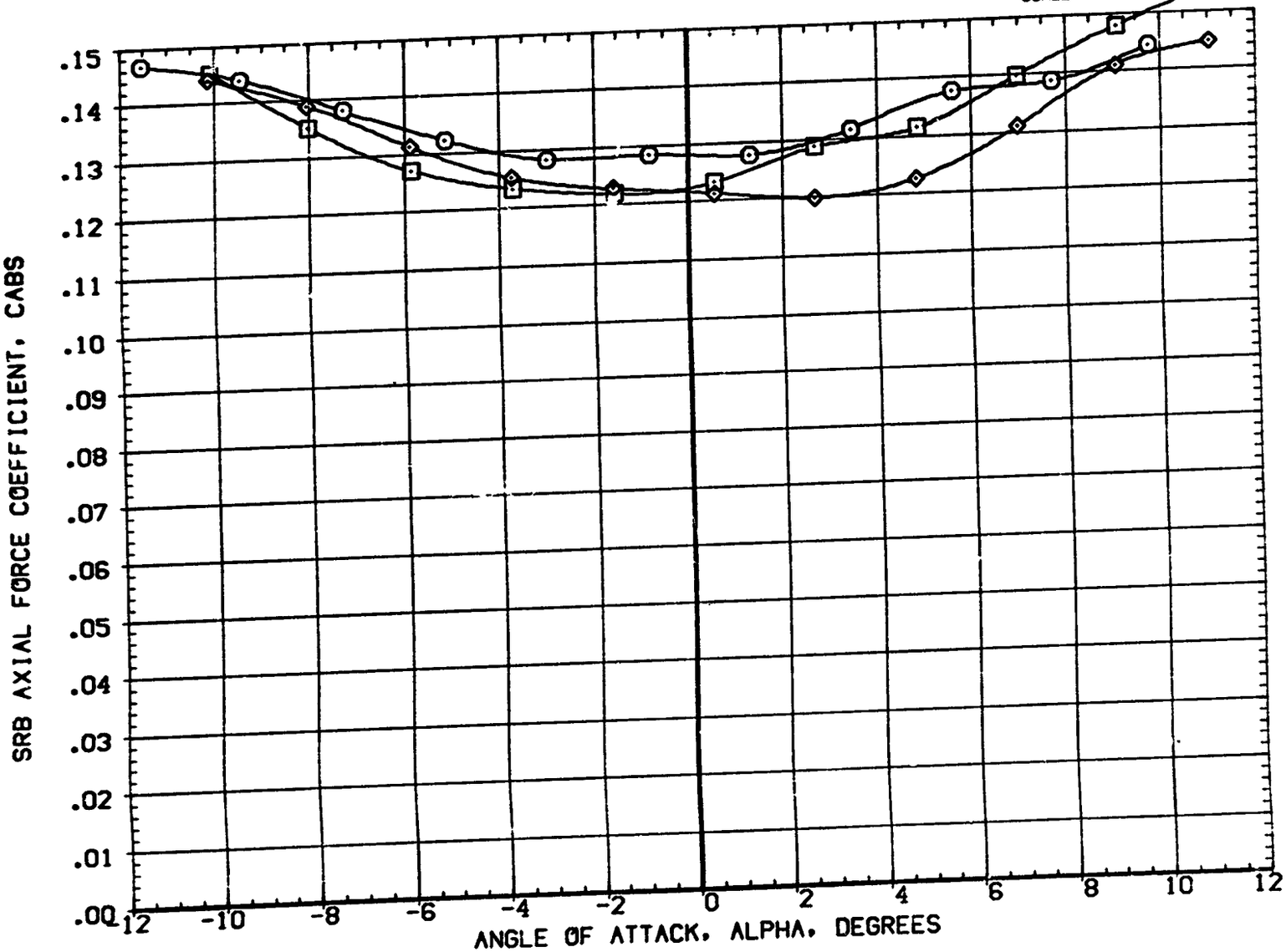


EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A3IFC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A3IFC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION		
SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



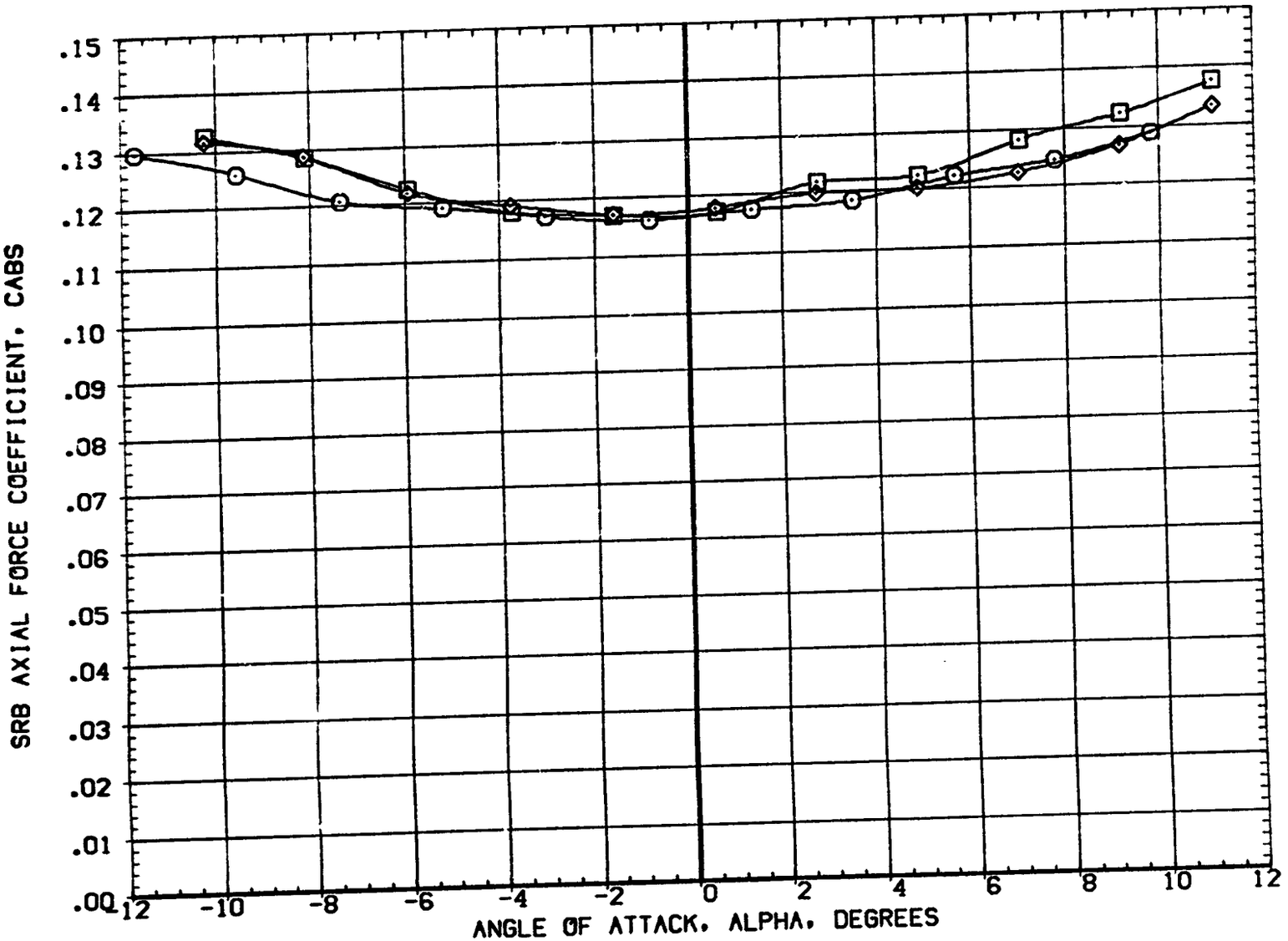
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(890402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



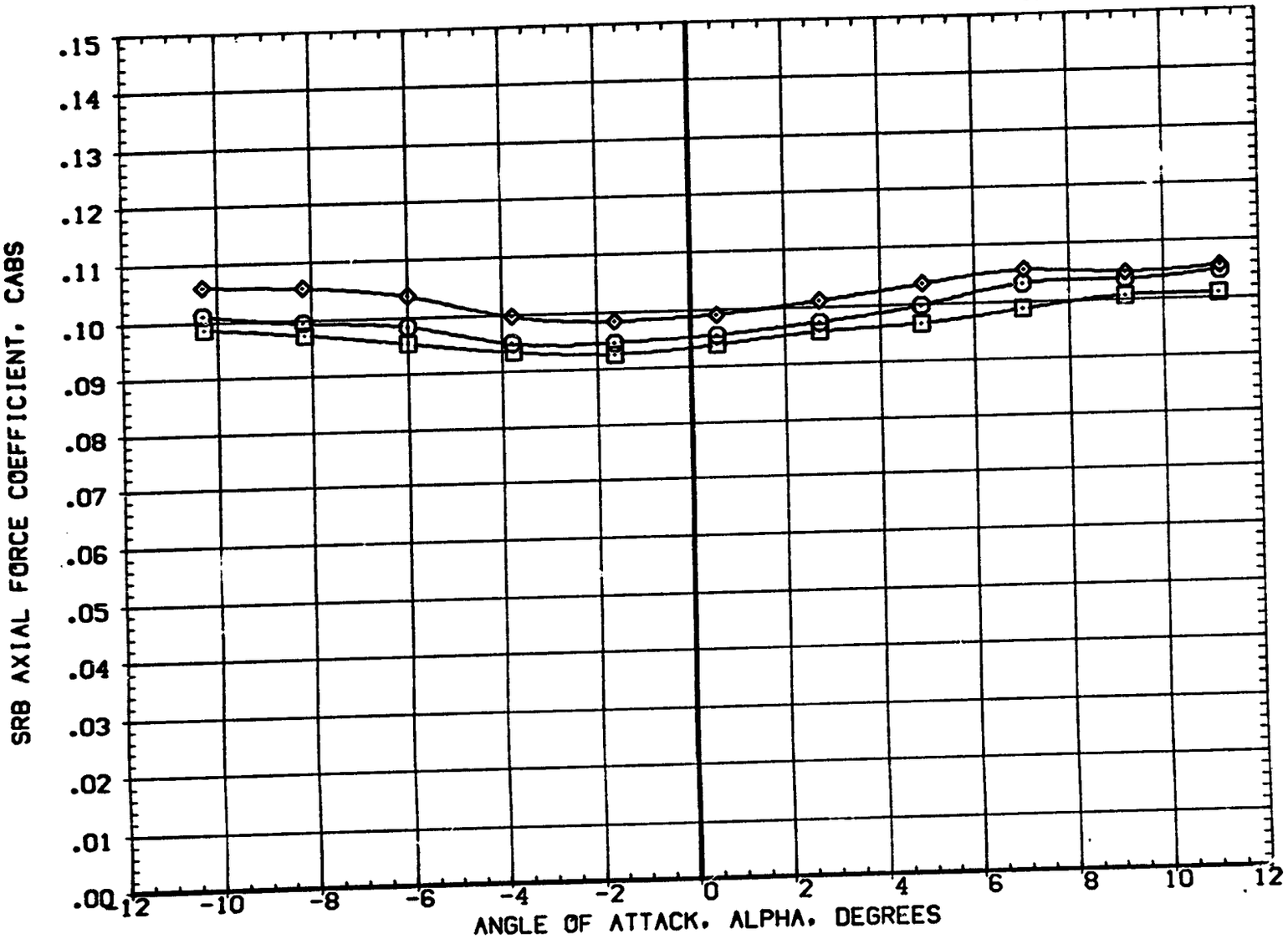
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000) ○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890401) □	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402) ◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



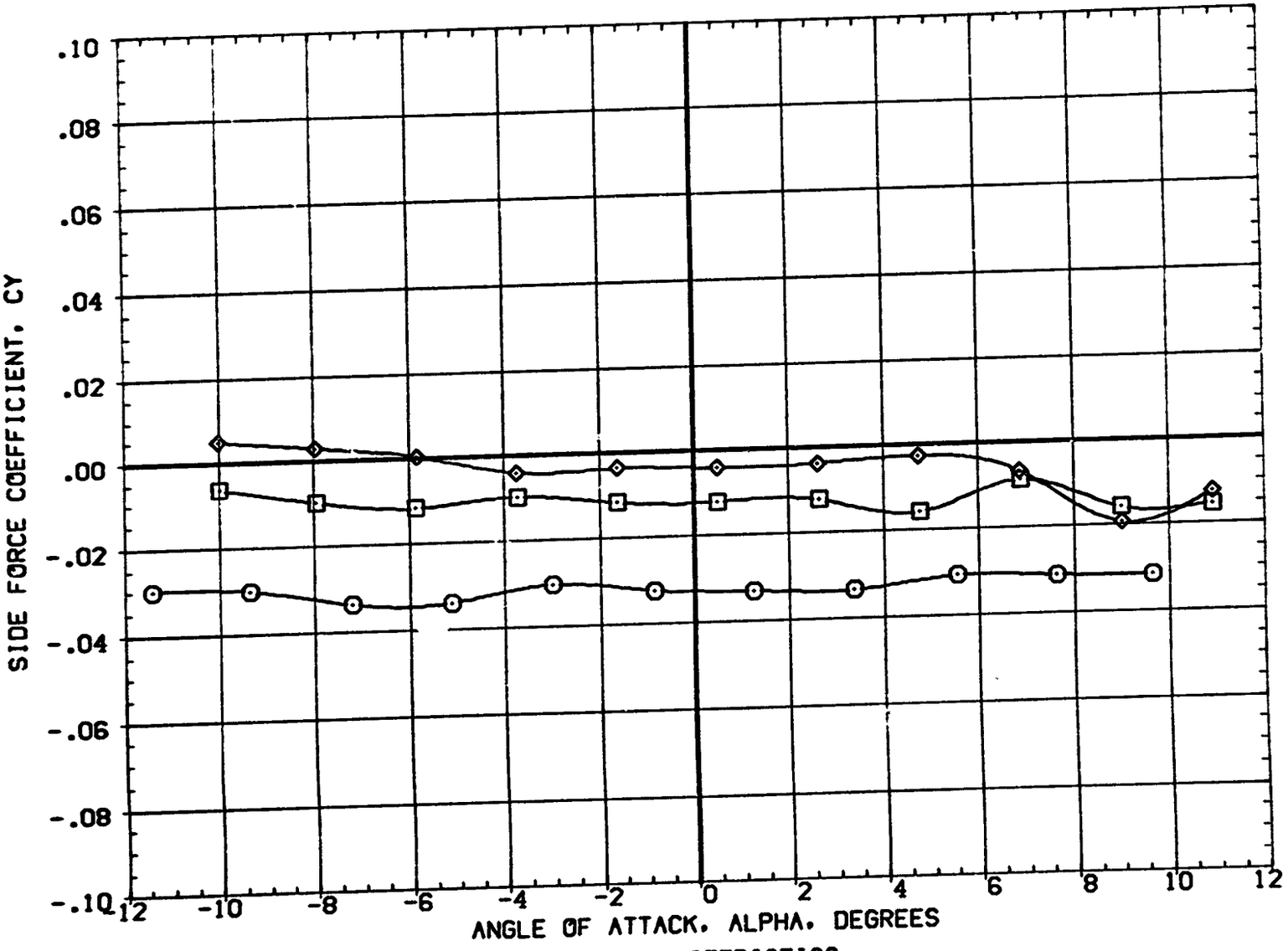
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



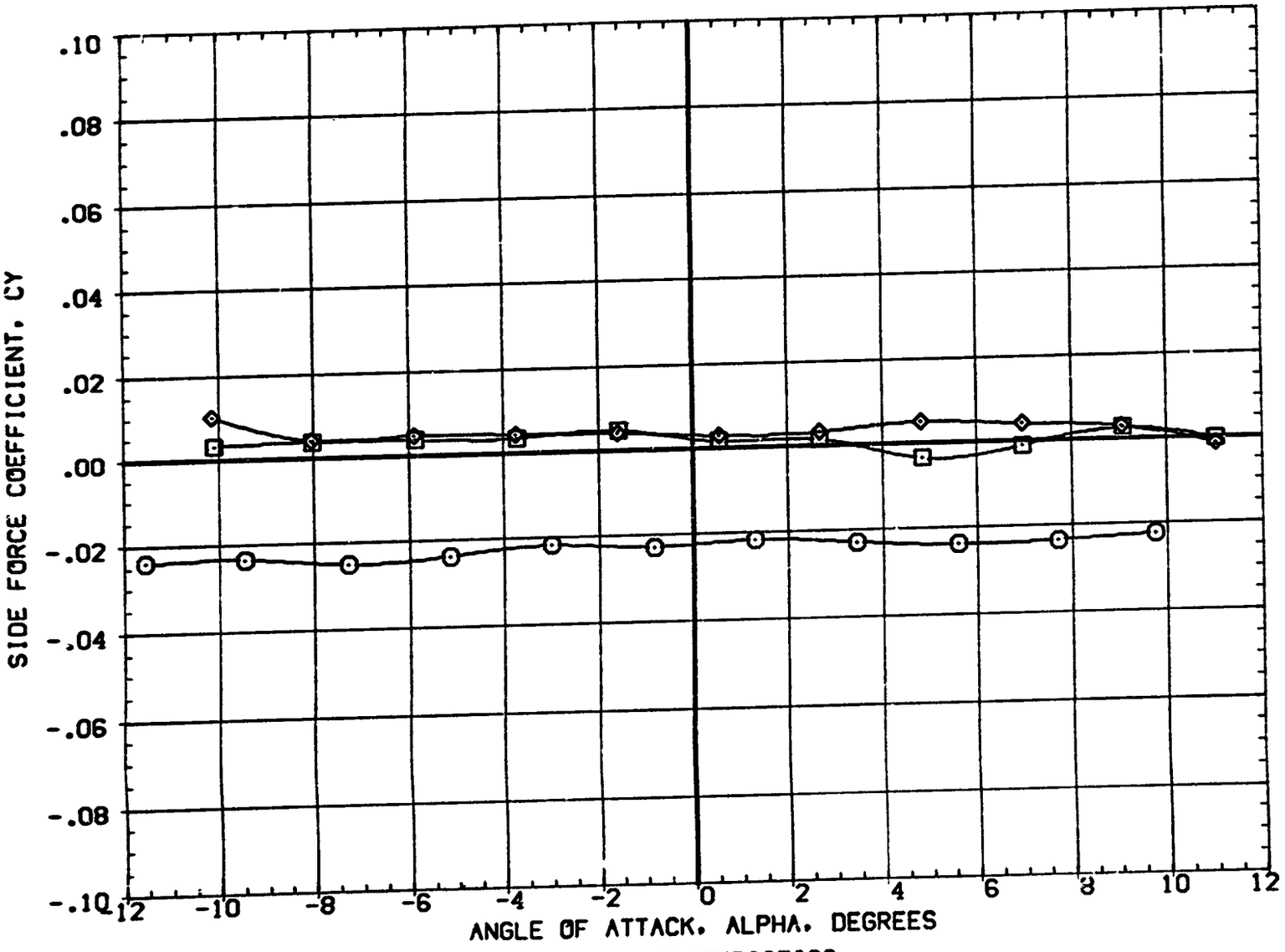
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(890401)	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402)	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



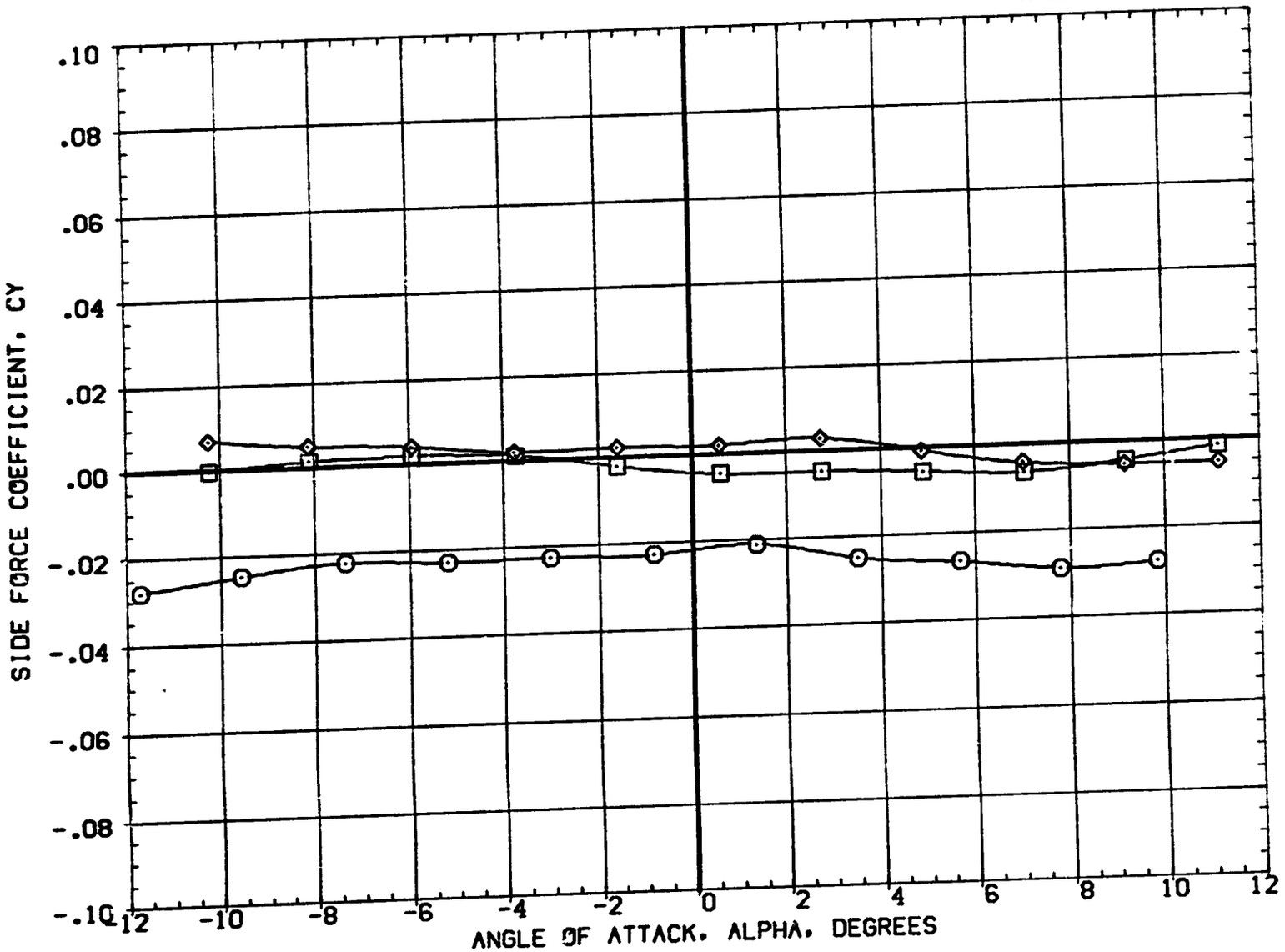
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



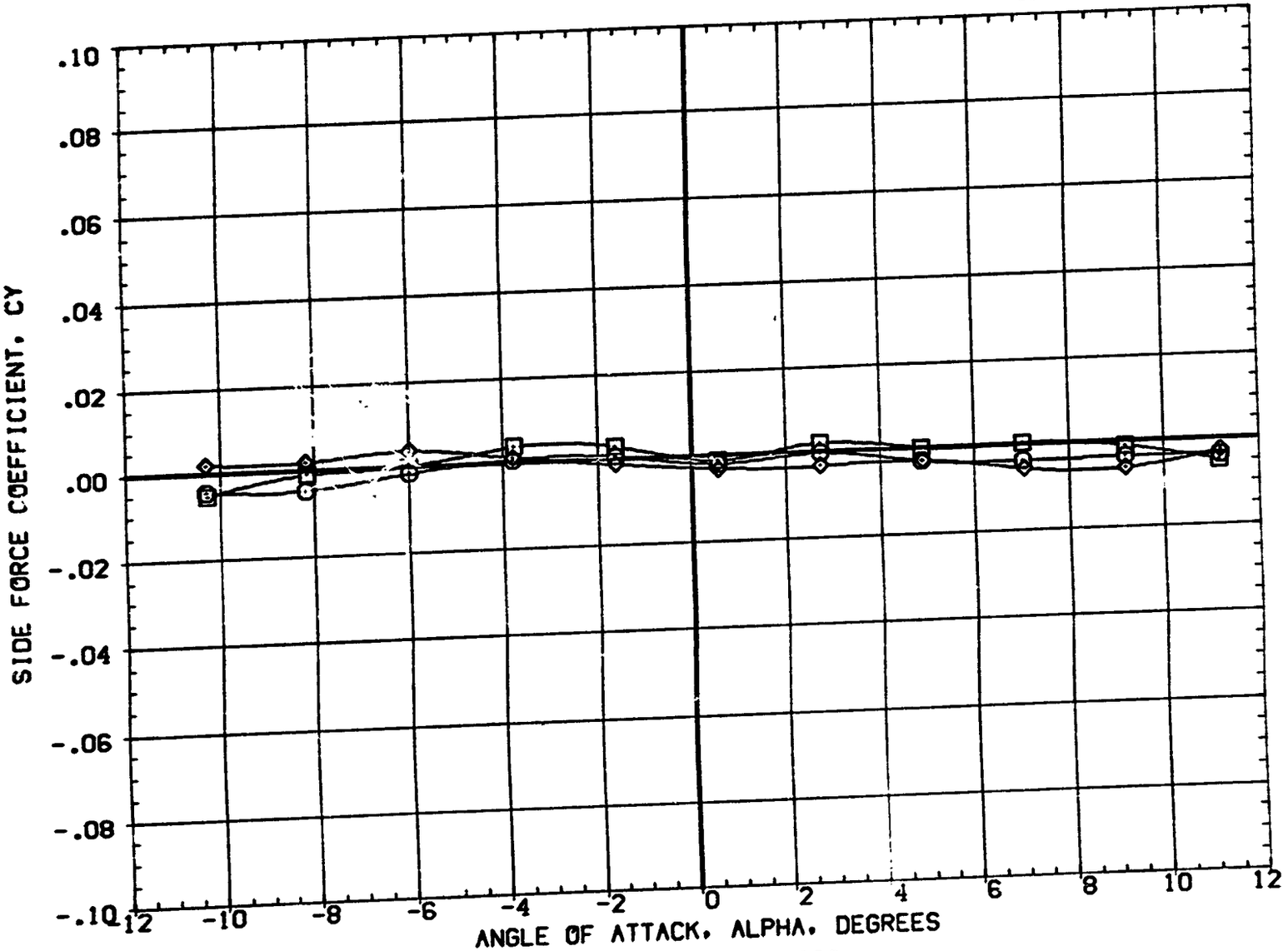
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



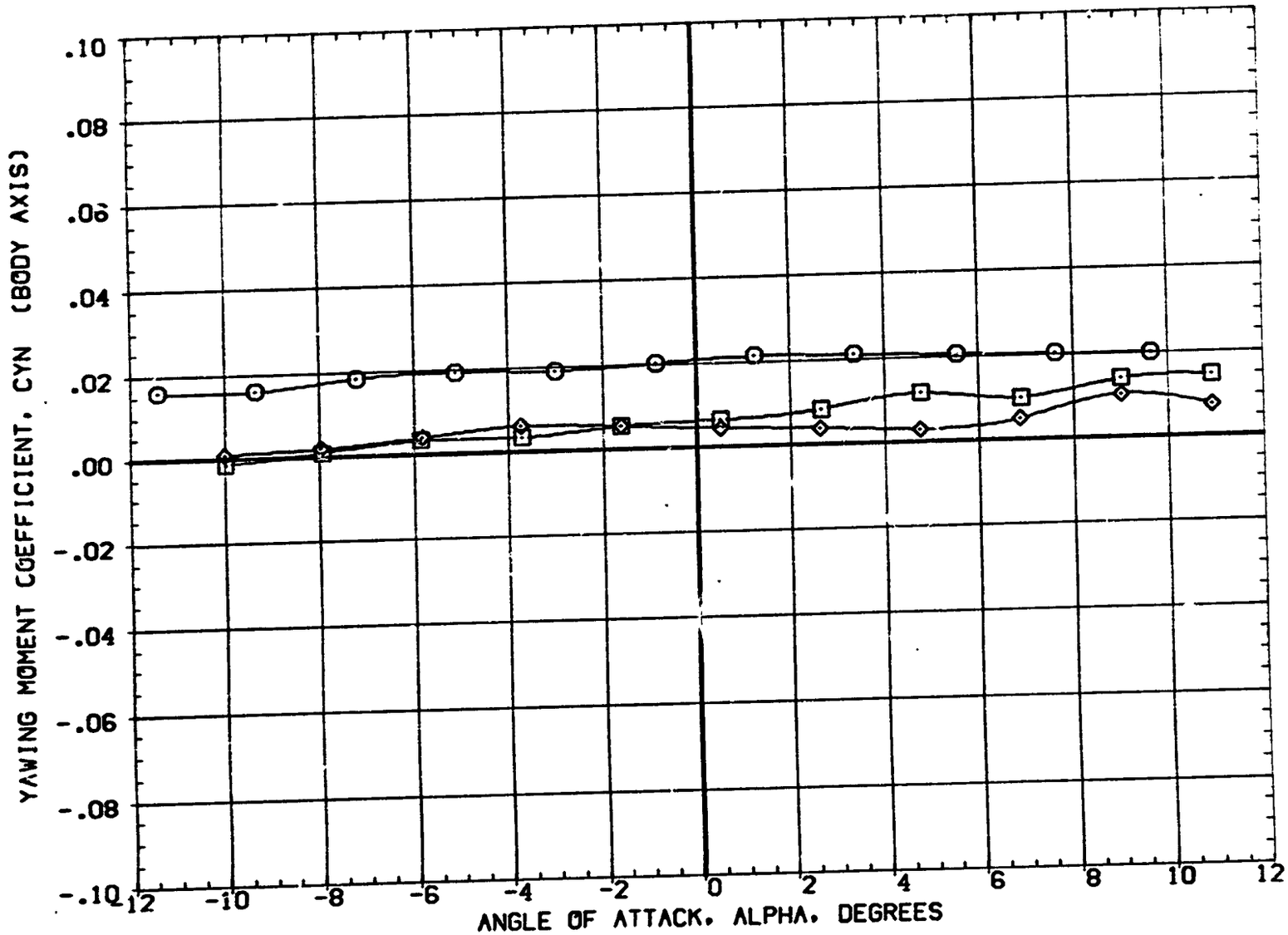
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	ORBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



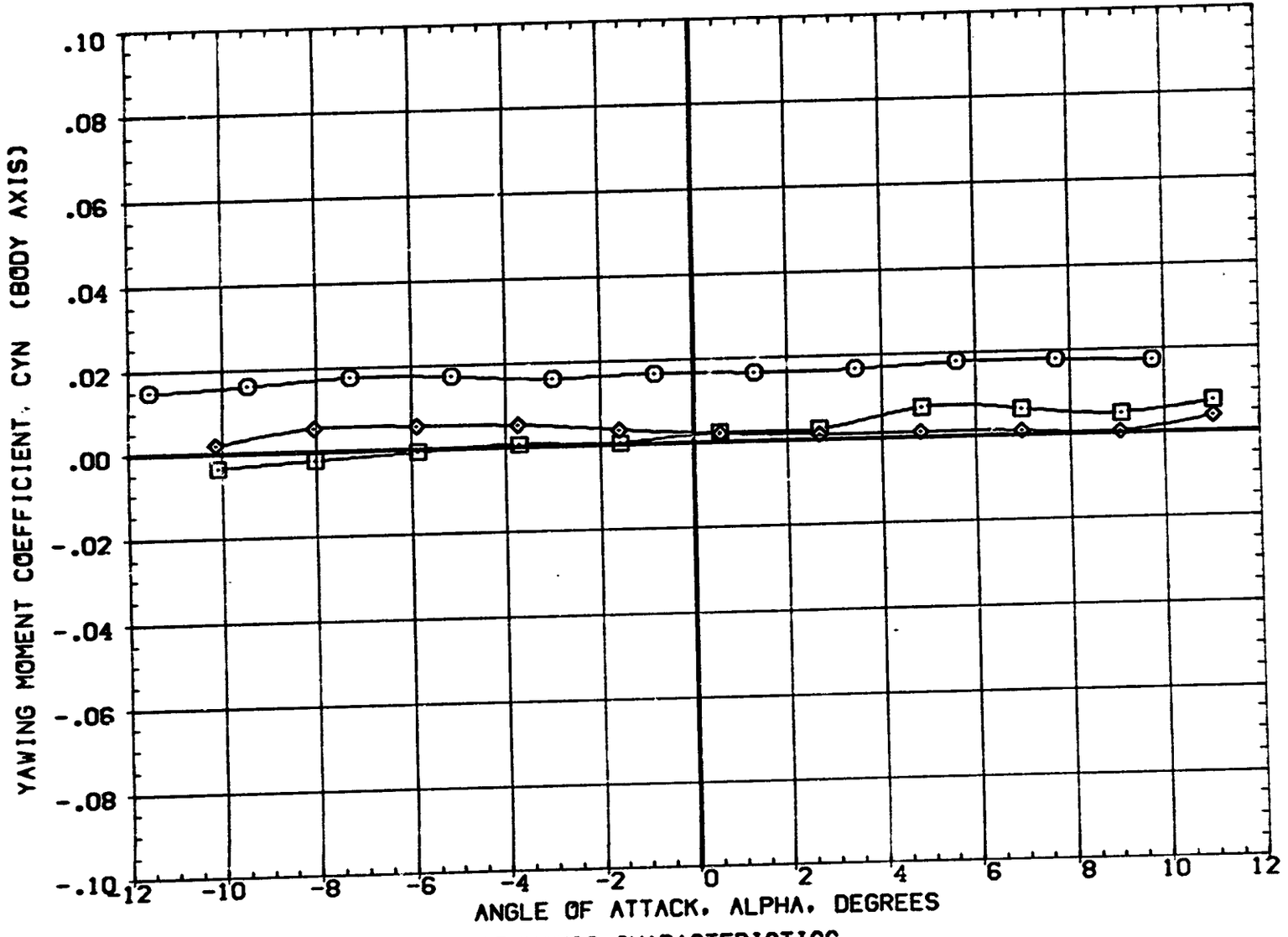
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



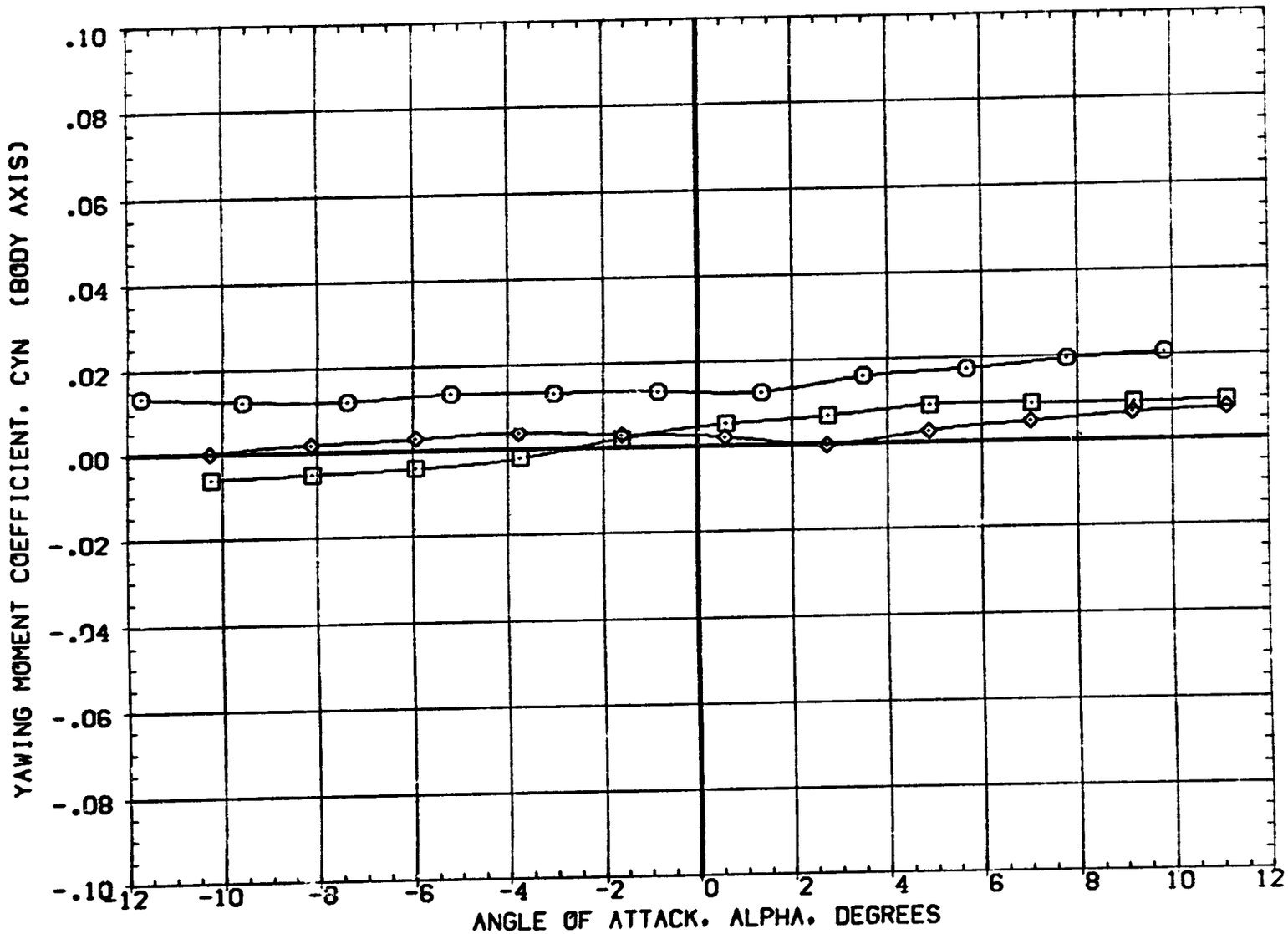
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



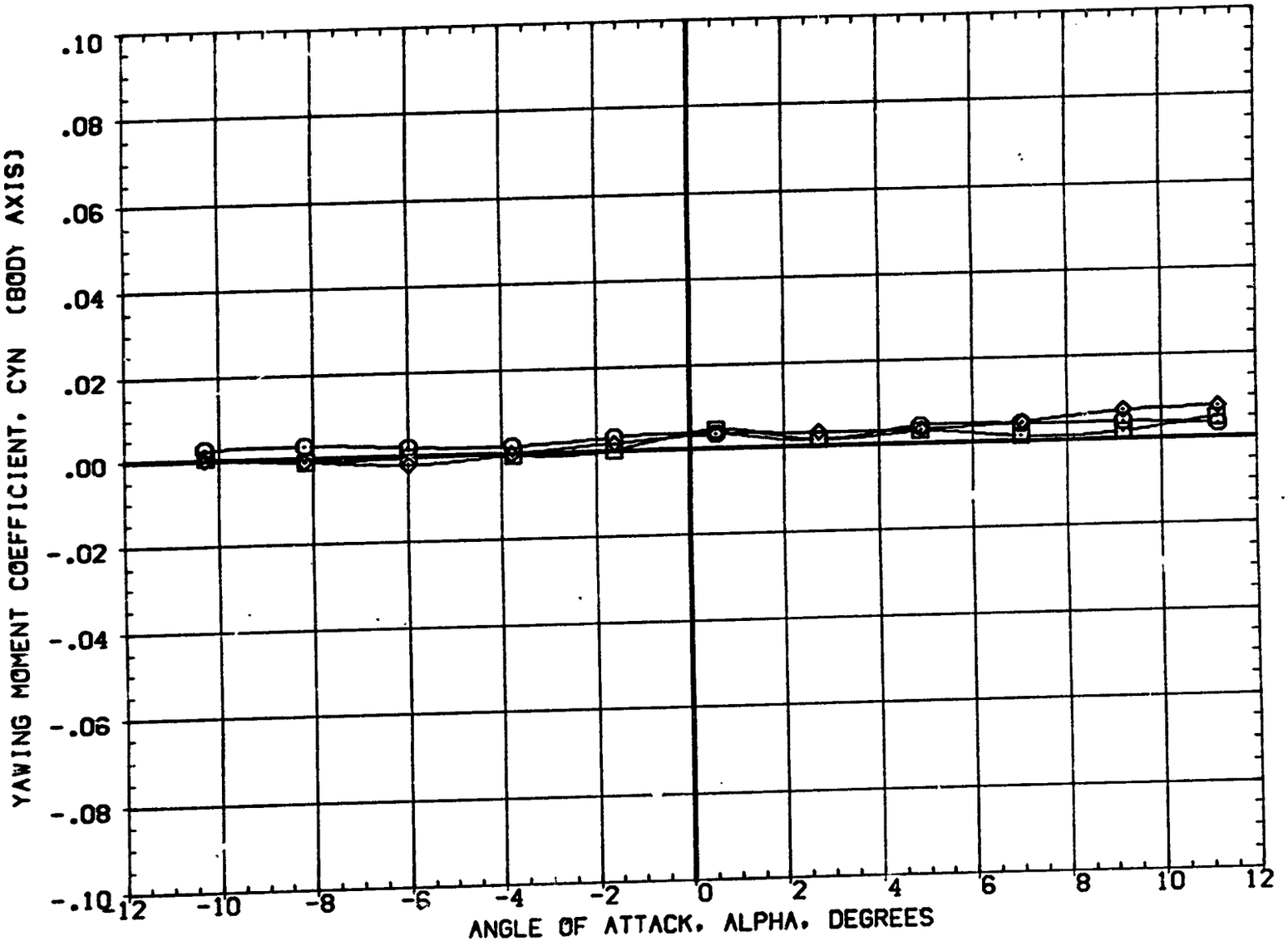
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	□	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401)	▽	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



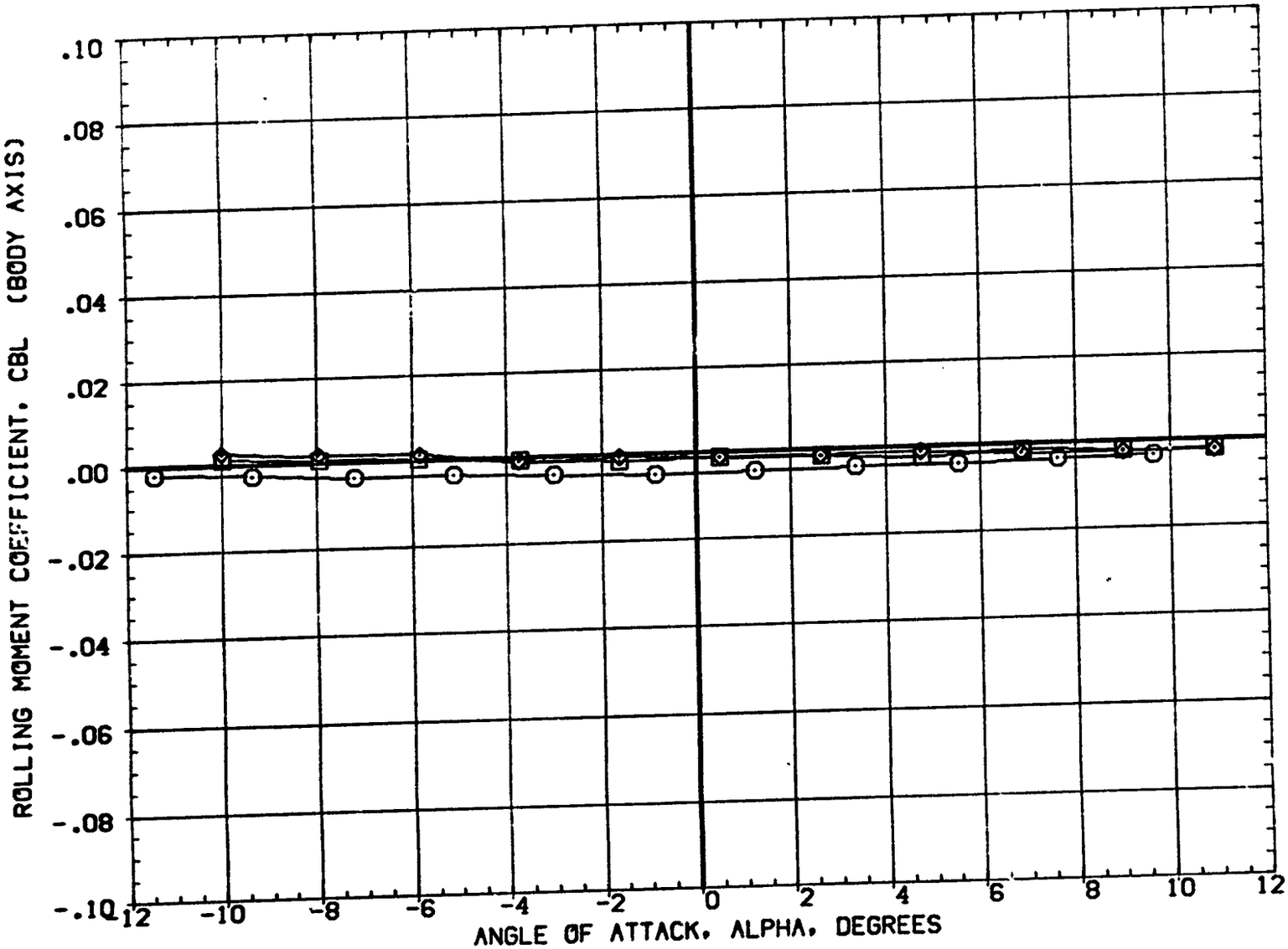
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(IA31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(IA31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



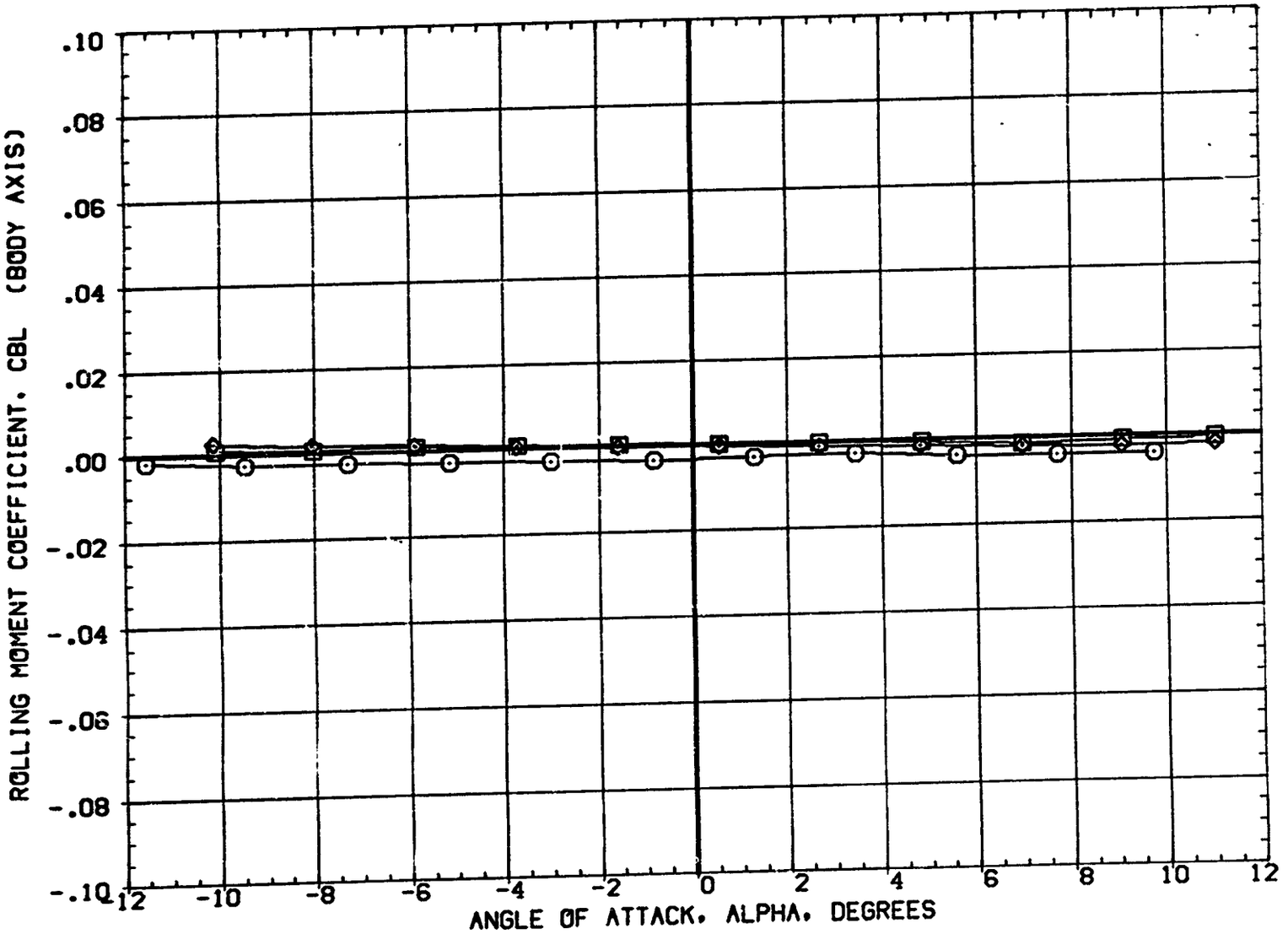
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(A)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000) ○	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(B90401) □	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(B90402) ◇	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



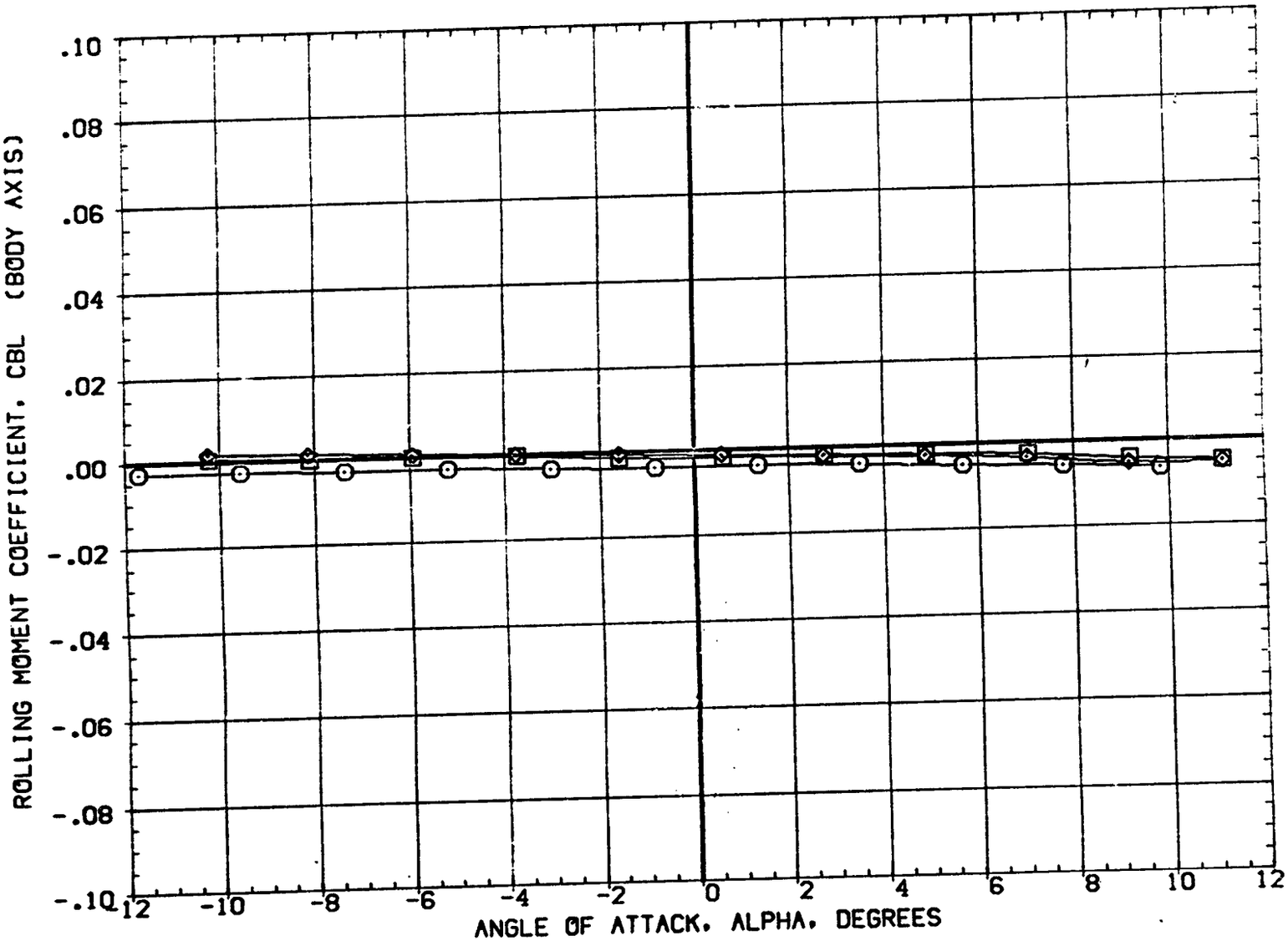
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(B)MACH = 1.05

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(B90000)	○	MSFC 573(1A3)FC) (03)(T9)(S3)	.500	.140	
(B90401)	□	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	1.000
(B90402)	◇	MSFC 573(1A3)FC) (03)(T9)(S3) SRB MISALNO.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



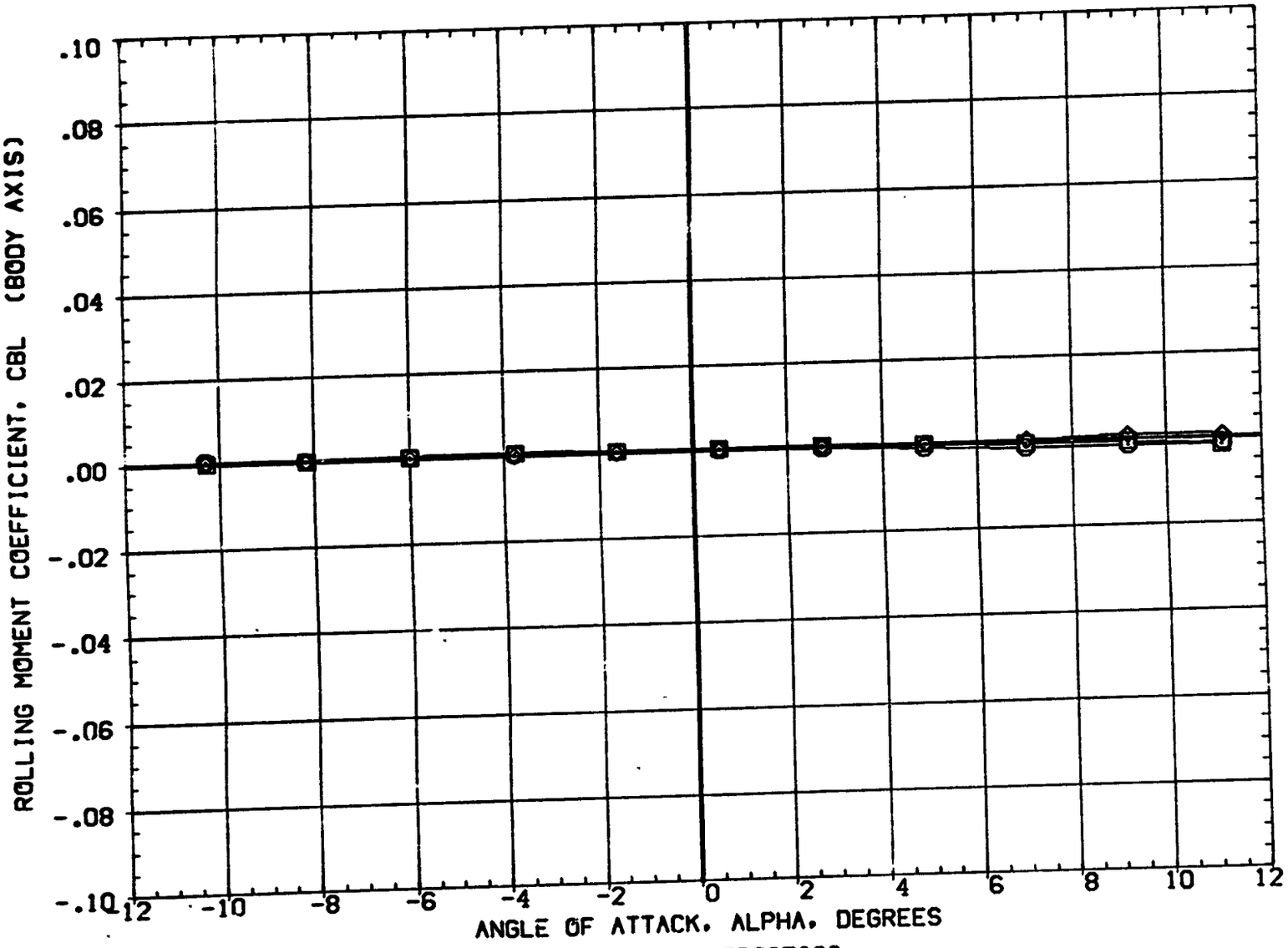
EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(C)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	DELTAZ	SRBPIT
(890000)	MSFC 573(1A31FC) (03)(T9)(S3)	.500	.140	
(890401)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	1.000
(890402)	MSFC 573(1A31FC) (03)(T9)(S3) SRB MISALND.	.500	.140	-1.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN
LREF	5.3130	IN.
BREF	5.3130	IN.
XMRP	2.5490	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF SRB PITCH ON AERODYNAMIC CHARACTERISTICS

(D)MACH = 1.46

APPENDIX

TABULATED SOURCE DATA

Plotted data tabulations are available
from the DMS on request.

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(1A31FC) (C8) (T9) (S3)

(R90000) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .900
DELTAZ = .140

RUN NO. 1/ 0 RN/L = 6.27 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.901	-11.420	-.74100	.29680	-.02980	.01600	-.00200	.09510	.01220	.05770	.08100	.12310
.901	-9.350	-.58640	.23010	-.03020	.01600	-.00260	.10180	.01220	.05760	.07580	.11800
.901	-7.220	-.44840	.17020	-.03370	.01860	-.00360	.11370	.01210	.05720	.07010	.11230
.901	-5.110	-.30830	.10710	-.03400	.01950	-.00370	.11910	.01200	.05680	.06400	.11230
.901	-2.990	-.16610	.03530	-.03040	.01920	-.00430	.12800	.01170	.05550	.05880	.10830
.901	-.860	-.04070	-.02450	-.03250	.02030	-.00470	.12210	.01170	.05500	.05720	.11120
.901	1.250	.09510	-.08590	-.03320	.02140	-.00460	.12730	.01160	.05460	.05580	.11300
.901	3.380	.21340	-.12950	-.03360	.02110	-.00430	.12020	.01140	.05390	.05280	.11680
.901	5.540	.33200	-.16580	-.03090	.02060	-.00420	.11940	.01140	.05390	.04920	.12370
.901	7.630	.45870	-.23040	-.03140	.02020	-.00370	.11210	.01120	.05290	.05260	.12280
.901	9.650	.57250	-.27600	-.03170	.02000	-.00330	.09770	.01160	.05480	.05260	.13130
	GRADIENT	.06005	-.02619	-.00049	.00032	.00000	-.00086	-.00005	-.00025	-.00091	.00129

RUN NO. 4/ 0 RN/L = 6.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.047	-11.570	-.80570	.34150	-.02400	.01490	-.00170	.20680	.01290	.06080	.07860	.14680
1.047	-9.460	-.63790	.26790	-.02350	.01600	-.00260	.21620	.01310	.06180	.07330	.14390
1.047	-7.290	-.47600	.19720	-.02500	.01760	-.00270	.22910	.01300	.06140	.06660	.13790
1.047	-5.140	-.32550	.13080	-.02380	.01720	-.00300	.24080	.01300	.06110	.05990	.13220
1.047	-2.990	-.17320	.05800	-.02190	.01620	-.00320	.24760	.01290	.06080	.05410	.12820
1.047	-.820	-.02670	-.01290	-.02290	.01680	-.00350	.24640	.01290	.06100	.04950	.12840
1.047	1.300	.11320	-.08570	-.02180	.01650	-.00320	.24370	.01280	.06040	.04240	.12780
1.047	3.440	.24580	-.14660	-.02290	.01670	-.00300	.23430	.01280	.06060	.03940	.13160
1.047	5.600	.36110	-.18600	-.02400	.01780	-.00400	.22320	.01280	.06060	.03760	.13750
1.047	7.720	.47820	-.23420	-.02350	.01780	-.00430	.21820	.01270	.05980	.03480	.13860
1.047	9.750	.59080	-.27970	-.02240	.01730	-.00410	.20990	.01290	.06080	.03120	.14430
	GRADIENT	.06525	-.03207	-.00009	.00006	.00004	-.00199	-.00002	-.00006	-.00239	.00045

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573 (IA51FC) (08) (T9) (S3)

(R90000) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .500
DELTAZ = .140

RUN NO. 2/ 0 RN/L = 6.66 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.195	-11.700	-.81120	.31850	-.03420	.01850	-.00410	.23120	.01200	.05660	.07710	.13770
1.195	-9.560	-.62800	.24070	-.03500	.01990	-.00500	.23670	.01220	.05760	.07470	.13370
1.195	-7.350	-.45670	.16770	-.03440	.02070	-.00520	.24720	.01230	.05810	.07090	.12860
1.195	-5.180	-.29630	.09800	-.03310	.02150	-.00510	.25700	.01250	.05880	.06720	.12510
1.195	-3.010	-.14970	.03470	-.03330	.02180	-.00550	.26520	.01250	.05880	.06310	.12210
1.195	-.810	-.00360	-.02800	-.03150	.02080	-.00520	.27090	.01250	.05900	.05910	.12060
1.195	1.340	.13500	-.08960	-.02920	.01940	-.00510	.26880	.01240	.05970	.05550	.12060
1.195	3.490	.27010	-.15310	-.02750	.01780	-.00450	.26520	.01250	.05880	.05190	.12230
1.195	5.670	.39900	-.20600	-.02630	.01630	-.00330	.26100	.01260	.05930	.04780	.12560
1.195	7.790	.50010	-.24380	-.02730	.01760	-.00410	.25120	.01270	.05990	.04420	.12810
1.195	9.840	.61190	-.28440	-.02690	.01810	-.00440	.24570	.01290	.06070	.04090	.13260
	GRADIENT	.06458	-.02887	.00091	-.00062	.00014	-.00009	-.00000	-.00001	-.00172	.00002

RUN NO. 3/ 0 RN/L = 6.65 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.248	-11.730	-.81800	.32130	-.02800	.01340	-.00270	.23210	.01140	.05380	.07460	.12960
1.248	-9.580	-.62710	.23780	-.02480	.01240	-.00260	.23990	.01140	.05390	.07070	.12600
1.248	-7.370	-.45180	.16140	-.02230	.01200	-.00300	.24900	.01140	.05380	.06560	.12070
1.248	-5.190	-.29470	.09570	-.02310	.01350	-.00300	.25870	.01160	.05490	.05910	.11910
1.248	-3.010	-.15190	.03680	-.02260	.01330	-.00350	.26730	.01170	.05500	.05470	.11710
1.248	-.810	-.00600	-.02520	-.02280	.01330	-.00400	.27290	.01180	.05570	.05050	.11600
1.248	1.350	.12650	-.07840	-.02110	.01270	-.00390	.27090	.01200	.05650	.04820	.11740
1.248	3.500	.25410	-.13720	-.02510	.01600	-.00430	.26480	.01210	.05730	.04730	.11850
1.248	5.680	.38610	-.19420	-.02670	.01740	-.00510	.26020	.01250	.05890	.04710	.12220
1.248	7.800	.50660	-.24830	-.02890	.01940	-.00560	.25700	.01270	.05990	.04060	.12460
1.248	9.850	.61150	-.28460	-.02790	.02060	-.00650	.24880	.01270	.06010	.03700	.12890
	GRADIENT	.06227	-.02652	-.00027	.00034	-.00011	-.00043	.00006	.00035	-.00113	.00026

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573 (IA31FC) (05) (T9) (S3)

(R90000) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .500
DELTAZ = .140

RUN NO. 5/ 0 RN/L = 6.45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBX	CAF	CNBO	CABO	CABE	CABS
1.461	-10.310	-.70420	.27440	-.00480	.00270	.00050	.26520	.00650	.04010	.05320	.10100
1.461	-8.190	-.55760	.20120	-.00470	.00910	.00010	.27240	.00650	.04010	.04850	.09940
1.461	-6.000	-.37060	.12800	-.00160	.00220	.00020	.27850	.00870	.04100	.04310	.09650
1.461	-3.790	-.21970	.06370	.00070	.00180	.00050	.28810	.00880	.04150	.04040	.09490
1.461	-1.630	-.07470	.00340	.00060	.00330	.00030	.29410	.00890	.04190	.03620	.09460
1.461	.570	.06470	-.05260	-.00140	.00330	.00020	.29390	.00910	.04290	.03240	.09660
1.461	2.730	.19210	-.10350	-.00040	.00140	-.00030	.29720	.00910	.04290	.02760	.09750
1.461	4.890	.31610	-.15560	-.00310	.00430	-.00090	.29780	.00910	.04310	.02490	.09970
1.461	7.040	.43600	-.20750	-.00400	.00420	-.00150	.29450	.00920	.04320	.02630	.10310
1.461	9.210	.56090	-.25420	-.00360	.00420	-.00150	.29230	.00940	.04430	.02370	.10340
1.461	11.160	.67630	-.29140	-.00360	.00330	-.00130	.28870	.00950	.04490	.02090	.10470
	GRADIENT	.06162	-.02512	-.00040	.00014	-.00014	.00104	.00004	.00019	-.00182	.00057

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (C8) (T9) (S3) G

(R90100) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .500
DELTAZ = .140

RUN NO. 6/ 0 RN/L = 6.26 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.899	-10.550	-.66480	.26190	-.03460	.01700	-.00290	.13120	.01150	.05430	.07000	.09510
.899	-8.520	-.52500	.20190	-.03560	.01910	-.00370	.13640	.01170	.05510	.06600	.09240
.899	-6.390	-.38750	.14340	-.04240	.02330	-.00470	.14440	.01140	.05380	.05990	.08830
.899	-4.280	-.25230	.08310	-.04150	.02340	-.00510	.15370	.01130	.05330	.05590	.08390
.899	-2.150	-.12710	.02000	-.04110	.02320	-.00530	.15400	.01120	.05280	.04850	.08420
.899	-.040	.00440	-.04260	-.04240	.02320	-.00530	.15490	.01090	.05160	.04730	.08660
.899	2.080	.13420	-.09870	-.04310	.02360	-.00600	.15550	.01090	.05160	.04550	.09020
.899	4.210	.26070	-.14780	-.04560	.02570	-.00640	.15560	.01060	.05030	.04170	.09150
.899	6.330	.38600	-.19790	-.04170	.02420	-.00560	.14770	.01090	.05120	.04250	.09970
.899	8.450	.50780	-.25640	-.04570	.02670	-.00550	.14410	.01080	.05080	.04320	.10460
.899	10.360	.61910	-.30080	-.04460	.02630	-.00530	.14120	.01100	.05190	.04320	.10770
	GRADIENT	.06069	-.02737	-.00048	.00024	-.00016	.00025	-.00008	-.00034	-.00148	.00100

RUN NO. 7/ 0 RN/L = 6.56 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.047	-10.680	-.72050	.29990	-.02660	.01700	-.00260	.24040	.01270	.06010	.06570	.12270
1.047	-8.600	-.55990	.23170	-.02750	.01890	-.00340	.24810	.01260	.05970	.06000	.12030
1.047	-6.430	-.40920	.16790	-.02970	.02070	-.00420	.25510	.01270	.05990	.05490	.11730
1.047	-4.280	-.26190	.10070	-.03070	.02080	-.00470	.25850	.01250	.05920	.04990	.11580
1.047	-2.150	-.11100	.02700	-.03100	.02130	-.00520	.26120	.01260	.05950	.04440	.11360
1.047	.010	.03050	-.03990	-.03210	.02110	-.00570	.26210	.01240	.05850	.03990	.11200
1.047	2.140	.16780	-.10920	-.03020	.02050	-.00550	.25580	.01210	.05730	.03340	.11200
1.047	4.280	.29030	-.16030	-.03060	.02150	-.00560	.24800	.01220	.05750	.03140	.11630
1.047	6.420	.40610	-.20340	-.03290	.02320	-.00640	.24380	.01180	.05590	.02840	.12070
1.047	8.540	.52150	-.25750	-.03190	.02200	-.00580	.23240	.01200	.05690	.03010	.12780
1.047	10.480	.62840	-.30440	-.03140	.02110	-.00530	.23030	.01210	.05730	.02580	.13120
	GRADIENT	.06461	-.03074	.00005	.00005	-.00010	-.00123	-.00005	-.00026	-.00224	.00016

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573 (IA31FC) (05) (T9) (S3) 6

(R90100) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .900

DELTAZ = .140

RUN NO. 8/ 0 RN/L = 6.67 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.248	-10.630	-.73520	.28720	-.02780	.01200	-.00270	.26080	.01120	.05290	.06490	.12070
1.248	-8.700	-.55330	.20910	-.02650	.01290	-.00330	.26810	.01140	.05370	.06090	.11760
1.248	-6.520	-.36810	.13920	-.02850	.01590	-.00430	.27240	.01150	.05440	.05690	.11470
1.248	-4.350	-.24050	.07710	-.02930	.01700	-.00460	.27670	.01180	.05550	.05350	.11380
1.248	-2.160	-.09550	.01510	-.03080	.01780	-.00540	.28290	.01180	.05560	.04980	.11320
1.248	.030	.04200	-.04030	-.03230	.01860	-.00620	.28480	.01190	.05610	.04600	.11210
1.248	2.160	.17360	-.10090	-.03570	.02240	-.00680	.28180	.01190	.05620	.04260	.11380
1.248	4.340	.30490	-.15910	-.03520	.02310	-.00710	.27690	.01180	.05570	.03770	.11620
1.248	6.480	.43370	-.22270	-.03620	.02450	-.00800	.27060	.01200	.05650	.03350	.12270
1.248	8.630	.54670	-.26300	-.03340	.02390	-.00930	.26430	.01190	.05620	.03130	.12480
1.248	10.580	.65400	-.30230	-.03300	.02490	-.01010	.25740	.01210	.05730	.03140	.13000
	GRADIENT	.06273	-.02714	-.00077	.00077	-.00030	-.00003	.00000	.00005	-.00179	.00043

DATE 29 OCT 75

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (C8) (T9) (S3) CRB. MISALND. (R90200) (29 SEP 75)

REFERENCE DATA

SREF =	6.1960 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	CRBINC =	.500
DELTAZ =	.140	CRBROL =	1.000

RUN NO. 18/ 0 RN/L = 6.09 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.900	-10.010	-.62830	.24750	.00410	-.00100	.00120	.10160	.01140	.05400	.06980	.11210
.900	-7.960	-.48600	.18590	-.00010	.00180	.00070	.11010	.01140	.05360	.06550	.10750
.900	-5.930	-.34860	.12670	-.00360	.00370	.00090	.12190	.01110	.05220	.05880	.10270
.900	-3.710	-.20990	.05730	-.00560	.00510	.00000	.13170	.01060	.05110	.05100	.10090
.900	-1.630	-.08350	-.00620	-.00370	.00440	-.00020	.13730	.01000	.05020	.04500	.10120
.900	.510	.05010	-.06640	-.00400	.00480	-.00050	.13570	.01080	.05120	.04360	.10600
.900	2.640	.17400	-.11570	-.00350	.00550	.00010	.12950	.01070	.05050	.04250	.10980
.900	4.780	.30610	-.16380	-.00460	.00660	.00040	.13250	.01060	.05020	.03870	.11350
.900	6.900	.43290	-.22300	-.00720	.00770	.00140	.12770	.01090	.05140	.04140	.11980
.900	9.030	.55750	-.27690	-.01250	.01050	.00010	.12230	.01080	.05150	.04250	.12690
.900	10.940	.66520	-.32370	-.01360	.01150	.00090	.11820	.01110	.05260	.04220	.13310
	GRADIENT	.06072	-.02595	.00010	.00019	.00005	-.00029	-.00001	-.00007	-.00127	.00159

RUN NO. 20/ 0 RN/L = 6.41 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.046	-10.130	-.68300	.28790	.01200	-.00250	.00070	.20730	.01260	.05960	.06570	.14560
1.046	-8.040	-.52470	.21820	.00830	.00050	.00050	.22230	.01260	.05930	.05980	.13770
1.046	-5.870	-.37190	.15100	.00680	.00190	.00080	.23730	.01240	.05860	.05420	.12930
1.046	-3.740	-.21630	.07620	.00660	.00250	.00060	.24580	.01250	.05880	.04960	.12380
1.046	-1.590	-.06470	.00210	.00560	.00280	.00060	.24940	.01220	.05770	.04360	.12160
1.046	.550	.07250	-.06750	.00470	.00320	.00100	.24850	.01230	.05790	.03620	.12320
1.046	2.690	.21160	-.13460	.00440	.00330	.00060	.24430	.01210	.05710	.03150	.12360
1.046	4.840	.32990	-.17860	.00410	.00320	.00060	.24500	.01160	.05500	.02770	.12550
1.046	6.980	.45100	-.22730	.00310	.00310	.00090	.23130	.01200	.05670	.02730	.13430
1.046	9.100	.56930	-.28190	.00060	.00270	.00030	.22410	.01220	.05760	.02520	.14180
1.046	11.020	.67700	-.32790	.00040	.00250	.00180	.21600	.01250	.05880	.02520	.14780
	GRADIENT	.06384	-.03014	-.00029	.00009	.00000	-.00031	-.00009	-.00038	-.00261	.00025

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (CB) (T9) (S3) CRB. MISALND. (R90200) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	ORBRCL =	1.000

RUN NO. 19/ 0 RN/L = 6.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.247	-10.260	-.68310	.26370	.00990	-.00480	.00110	.24230	.01090	.05160	.06390	.12870
1.247	-8.130	-.50710	.18660	.00920	-.00420	.00080	.25100	.01110	.05260	.06000	.12360
1.247	-5.940	-.34300	.11480	.00660	-.00250	.00050	.26120	.01100	.05210	.05570	.11950
1.247	-3.750	-.19300	.05310	.00530	-.00020	.00050	.26890	.01120	.05270	.05240	.11560
1.247	-1.590	-.05060	-.00810	.00390	.00150	.00040	.27630	.01130	.05320	.04800	.11430
1.247	.600	.08810	-.06400	.00180	.00270	.00030	.27750	.01130	.05350	.04480	.11360
1.247	2.750	.21790	-.12380	-.00150	.00500	.00000	.27690	.01160	.05490	.04180	.11840
1.247	4.910	.35150	-.18200	-.00350	.00600	.00000	.27820	.01160	.05470	.03590	.12030
1.247	7.050	.47670	-.23890	-.00510	.00710	-.00030	.27440	.01190	.05610	.03240	.12310
1.247	9.210	.59050	-.27870	-.00350	.00420	-.00060	.26470	.01200	.05640	.02850	.12790
1.247	11.170	.70240	-.32000	-.00570	.00490	-.00040	.26020	.01210	.05730	.02580	.13310
	GRADIENT	.06267	-.02705	-.00106	.00073	-.00006	.00089	.00005	.00026	-.00181	.00062

RUN NO. 36/ 0 RN/L = 6.47 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.464	-10.310	-.69910	.27160	.00410	-.00050	.00120	.26670	.00850	.04040	.05310	.10100
1.464	-8.180	-.53010	.19810	.00350	.00090	.00100	.27430	.00850	.04040	.04770	.09950
1.464	-6.000	-.36830	.12720	.00140	.00100	.00020	.28130	.00870	.04090	.04260	.09840
1.464	-3.790	-.21460	.06180	.00260	.00170	.00030	.29050	.00880	.04140	.03980	.09440
1.464	-1.620	-.06980	.00090	.00250	.00230	.00030	.29620	.00890	.04210	.03510	.09470
1.464	.570	.07120	-.05510	.00170	.00270	.00010	.30160	.00900	.04240	.02980	.09390
1.464	2.740	.20100	-.10680	.00140	.00160	-.00050	.30110	.00900	.04260	.02670	.09780
1.464	4.900	.32240	-.15820	-.00180	.00430	-.00090	.30180	.00910	.04290	.02380	.09930
1.464	7.050	.44350	-.21100	-.00330	.00510	-.00150	.29810	.00910	.04310	.02530	.10320
1.464	9.220	.56700	-.25760	-.00350	.00560	-.00170	.29530	.00940	.04420	.02230	.10390
1.464	11.190	.68480	-.29620	-.00190	.00480	-.00180	.29300	.00940	.04450	.01990	.10420
	GRADIENT	.06186	-.02519	-.00045	.00021	-.00015	.00128	.00003	.00016	-.00186	.00064

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (C8) (T9) (S3) ORB. MISALND. (R90201) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DAT.

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	ORBYAW =	1.000

RUN NO. 23/ 0 RN/L = 6.14 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.896	-10.000	-.62830	.24760	.03250	-.01610	.00760	.12650	.01150	.05440	.06940	.11350
.896	-7.960	-.48830	.18620	.03250	-.01540	.00750	.12400	.01110	.05230	.06290	.10510
.896	-5.890	-.35190	.12970	.03290	-.01370	.00770	.12510	.01090	.05150	.06010	.10220
.896	-3.710	-.22030	.06590	.03560	-.01500	.00750	.13190	.01080	.05090	.05090	.09930
.896	-1.620	-.08770	-.00090	.03300	-.01160	.00750	.13430	.01070	.05060	.04500	.10070
.896	.500	.03880	-.05790	.03180	-.01210	.00660	.13850	.01050	.04980	.04520	.10040
.896	2.630	.16890	-.11030	.03300	-.01380	.00680	.13660	.01040	.04910	.04080	.10640
.896	4.770	.29870	-.16020	.02830	-.01260	.00560	.13340	.01060	.05010	.04110	.11250
.896	6.880	.42610	-.22040	.02720	-.01190	.00550	.12990	.01070	.05050	.03740	.11740
.896	9.010	.55200	-.27430	.02030	-.00850	.00550	.12630	.01080	.05080	.04220	.12330
.896	10.910	.66100	-.32090	.01920	-.00670	.00550	.12330	.01090	.05140	.04170	.12960
	GRADIENT	.05104	-.02647	-.00059	.00012	-.00021	.00025	-.00003	-.00015	-.00112	.00152

RUN NO. 21/ 0 RN/L = 6.42 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.048	-10.110	-.68230	.28760	.04250	-.02020	.00830	.21250	.01240	.05870	.06540	.14390
1.048	-8.040	-.52460	.21860	.04100	-.01800	.00810	.22620	.01240	.05850	.05890	.13720
1.048	-5.880	-.37150	.15060	.03710	-.01610	.00800	.24130	.01220	.05740	.05320	.12800
1.048	-3.720	-.21750	.07770	.03760	-.01612	.00800	.24760	.01230	.05800	.04860	.12300
1.048	-1.590	-.06790	.00460	.03530	-.01570	.00860	.25340	.01210	.05700	.04230	.12060
1.048	.560	.07620	-.06640	.03720	-.01690	.00900	.25120	.01210	.05710	.03530	.12130
1.048	2.700	.21440	-.13510	.03560	-.01580	.00800	.24640	.01210	.05710	.03110	.12340
1.048	4.840	.33360	-.18000	.03500	-.01720	.00790	.24890	.01150	.05440	.02730	.12280
1.048	6.980	.45180	-.22620	.03330	-.01840	.00780	.23860	.01180	.05550	.02380	.13070
1.048	9.110	.57150	-.28220	.02600	-.01520	.00700	.22730	.01200	.05650	.02520	.13810
1.048	11.040	.67700	-.32710	.02490	-.01460	.00690	.21870	.01230	.05790	.02410	.14570
	GRADIENT	.06467	-.03060	-.00023	-.00011	-.00004	-.00021	-.00007	-.00033	-.00251	.00010

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 575

MSFC 575(IA31FC) (OB) (T9) (33) ORB. MISALND. (R90201) (29 SEP 73)

REFERENCE DATA

SREF =	8.1960 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	ORBYAW =	1.000

RUN NO. 22/ 0 RN/L = 6.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.247	-10.270	-.68630	.26700	.03960	-.00120	.00910	.24390	.01090	.05140	.06460	.12890
1.247	-8.130	-.50810	.18800	.03770	-.01940	.00670	.25220	.01100	.05200	.06070	.12500
1.247	-5.940	-.34790	.11780	.03380	-.01790	.00640	.26290	.01110	.05230	.05620	.12000
1.247	-3.750	-.19810	.05570	.03100	-.01630	.00600	.27120	.01100	.05200	.05190	.11480
1.247	-1.590	-.05340	-.00610	.02840	-.01460	.00750	.27770	.01110	.05250	.04810	.11400
1.247	.600	.08640	-.06250	.02370	-.01270	.00670	.27860	.01120	.05290	.04530	.11480
1.247	2.740	.21510	-.12180	.02150	-.01170	.00560	.27950	.01140	.05380	.04070	.11720
1.247	4.900	.34780	-.17950	.01810	-.00950	.00520	.27780	.01150	.05450	.03660	.12040
1.247	7.060	.47710	-.23760	.01600	-.00750	.00450	.27600	.01170	.05540	.03280	.12290
1.247	9.200	.58690	-.27840	.01300	-.00760	.00300	.26790	.01190	.05600	.02970	.12770
1.247	11.160	.70090	-.31940	.01140	-.00770	.00280	.26110	.01210	.05720	.02760	.13310
	GRADIENT	.06289	-.02710	-.00151	.00078	-.00035	.00069	.00006	.00029	-.00176	.00066

RUN NO. 37/ 0 RN/L = 6.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.454	-10.310	-.70170	.27390	.02690	-.01340	.00780	.26810	.00840	.03970	.05310	.10050
1.454	-8.180	-.53370	.20090	.02490	-.01290	.00670	.27210	.00850	.04040	.04970	.10070
1.454	-6.000	-.36820	.12770	.02360	-.01120	.00620	.27850	.00880	.04140	.04540	.10010
1.454	-3.790	-.21600	.06310	.02410	-.01080	.00520	.28930	.00890	.04190	.04020	.09650
1.454	-1.620	-.07260	.00310	.02140	-.01000	.00580	.29390	.00900	.04250	.03570	.09600
1.454	.570	.06560	-.05140	.02060	-.01080	.00560	.29630	.00910	.04300	.03160	.09690
1.454	2.740	.19540	-.10370	.01840	-.01050	.00440	.29660	.00920	.04330	.02910	.09990
1.454	4.900	.32010	-.15510	.01570	-.00830	.00370	.29560	.00930	.04380	.02620	.10160
1.454	7.050	.44020	-.20700	.01420	-.00750	.00310	.29240	.00940	.04450	.02700	.10540
1.454	9.220	.56360	-.25260	.01330	-.00640	.00250	.28940	.00960	.04540	.02430	.10530
1.454	11.190	.67940	-.29070	.01380	-.00490	.00200	.28570	.00960	.04550	.02140	.10540
	GRADIENT	.06165	-.02499	-.00091	.00021	-.00029	.00070	.00005	.00021	-.00159	.00065

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 575

MSFC 575(IA31FC) (OS) (T9) (S3) SRB MISALND. (R90300) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBYAW =	1.000

RUN NO. 24/ 0 RN/L = 6.25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.898	-9.990	-.61890	.24340	-.00540	.00040	.00150	.10960	.01130	.05360	.06910	.11470
.898	-7.980	-.48050	.18290	-.00830	.00360	.00110	.11010	.01140	.05390	.06600	.10970
.898	-5.840	-.34710	.12140	-.00910	.00570	.00100	.11990	.01110	.05250	.05970	.10710
.898	-3.730	-.21030	.05060	-.00870	.00740	.00020	.12820	.01100	.05170	.05240	.10310
.898	-1.630	-.08290	-.00850	-.01000	.00820	-.00070	.12790	.01090	.05130	.04710	.10370
.898	.500	.03990	-.06080	-.01300	.00970	-.00160	.12710	.01070	.05060	.04670	.10680
.898	2.630	.16830	-.11090	-.01260	.00960	-.00190	.12990	.01060	.05020	.04260	.10940
.898	4.770	.29270	-.15580	-.01210	.00970	-.00210	.12900	.01050	.04940	.04040	.11140
.898	6.900	.42650	-.21200	-.01490	.01090	-.00310	.12610	.01110	.05220	.04190	.12060
.898	9.020	.55260	-.26790	-.02190	.01460	-.00340	.11850	.01090	.05150	.04240	.12610
.898	10.900	.65710	-.31900	-.01100	.00900	-.00210	.11240	.01100	.05190	.04360	.13360
	GRADIENT	.05913	-.02423	-.00044	.00028	-.00027	.00017	-.00006	-.00027	-.00124	.00105

RUN NO. 26/ 0 RN/L = 6.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.049	-10.100	-.67300	.28410	-.00120	.00220	.00090	.21160	.01250	.05920	.06560	.14360
1.049	-8.030	-.51690	.21520	-.00410	.00380	.00080	.22460	.01260	.05930	.05970	.13650
1.049	-5.870	-.36620	.14910	.00050	.00310	.00120	.23710	.01240	.05870	.05440	.12940
1.049	-3.710	-.21610	.07770	.00230	.00280	.00030	.24480	.01250	.05890	.04900	.12320
1.049	-1.600	-.06940	.00070	.00270	.00270	.00030	.24540	.01230	.05830	.04450	.12110
1.049	.540	.06940	-.07170	-.00160	.00590	.00010	.24480	.01220	.05760	.03670	.12050
1.049	2.690	.20740	-.13310	-.00470	.00720	-.00060	.23990	.01210	.05730	.03130	.12310
1.049	4.840	.32950	-.17520	-.00570	.00880	-.00160	.24500	.01150	.05450	.02670	.12260
1.049	6.980	.44560	-.22110	-.00550	.00740	-.00290	.23160	.01190	.05610	.02660	.13140
1.049	9.090	.56540	-.28260	-.00440	.00670	-.00260	.21980	.01220	.05760	.02850	.14050
1.049	11.010	.67290	-.33130	-.00340	.00610	-.00220	.21250	.01240	.05870	.02870	.14590
	GRADIENT	.06395	-.02989	-.00109	.00077	-.00022	-.00024	-.00010	-.00046	-.00270	.00004

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (OB) (T9) (S3) SRP MISALND. (R90300) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBYAW =	1.000

RUN NO. 25/ 0 RN/L = 6.67 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.247	-10.230	-.67200	.26090	-.00590	-.00120	.00060	.24210	.01110	.05260	.06590	.13110
1.247	-8.110	-.49590	.18380	-.00090	-.00220	.00060	.25100	.01130	.05330	.05960	.12660
1.247	-5.920	-.33780	.11450	.00140	-.00330	.00060	.26190	.01120	.05270	.05520	.12010
1.247	-3.740	-.19110	.05260	.00010	-.00040	.00000	.27000	.01130	.05310	.05150	.11750
1.247	-1.570	-.04870	-.00810	.00050	.00060	-.00070	.27490	.01150	.05430	.04930	.11490
1.247	.580	.08550	-.06760	-.00390	.00650	-.00090	.27520	.01170	.05510	.04590	.11630
1.247	2.740	.21550	-.12460	-.00360	.00540	-.00160	.27630	.01180	.05570	.04210	.11780
1.247	4.920	.34520	-.18050	-.00260	.00480	-.00270	.27550	.01170	.05540	.03650	.12000
1.247	7.030	.46760	-.24070	-.00360	.00500	-.00300	.27020	.01220	.05740	.03240	.12390
1.247	9.180	.58000	-.28350	-.00260	.00530	-.00400	.26500	.01210	.05710	.02830	.12770
1.247	11.130	.63170	-.32470	-.00410	.00820	-.00480	.25740	.01230	.05820	.02730	.13340
	GRADIENT	.06180	-.02694	-.00044	.00070	-.00050	.00057	.00005	.00028	-.00172	.00057

RUN NO. 38/ 0 RN/L = 6.46 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.462	-10.300	-.69200	.26700	-.00770	.00150	.00050	.26400	.00840	.03960	.05270	.10040
1.462	-8.170	-.52400	.19420	-.00410	.00000	.00040	.27040	.00850	.04000	.04850	.09980
1.462	-6.000	-.36370	.12450	-.00370	-.00040	-.00020	.27990	.00860	.04050	.04280	.09800
1.462	-3.780	-.21250	.06060	.00180	-.00150	.00000	.28770	.00880	.04150	.04130	.09430
1.462	-1.620	-.07070	.00050	.00050	.00110	.00000	.29340	.00890	.04180	.03680	.09420
1.462	.570	.06990	-.05560	-.00140	.00310	.00000	.29560	.00890	.04220	.03210	.09590
1.462	2.740	.20100	-.10830	-.00220	.00310	-.00020	.29650	.00900	.04260	.02870	.09710
1.462	4.890	.32230	-.16010	-.00490	.00660	-.00080	.29710	.00900	.04250	.02570	.10020
1.462	7.050	.44500	-.21240	-.00390	.00620	-.00110	.29580	.00910	.04300	.02630	.10130
1.462	9.210	.56840	-.25960	-.00470	.00710	-.00140	.29320	.00930	.04410	.02320	.10170
1.462	11.180	.68110	-.29570	-.00180	.00580	-.00110	.28880	.00940	.04460	.02130	.10270
	GRADIENT	.06178	-.02536	-.00074	.00084	-.00008	.00101	.00002	.00013	-.00181	.00068

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (05) (T9) (S3) SRB MISALND. (R90301) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBYAW =	-1.000

RUN NO. 29/ 0 RN/L = 6.19 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.902	-10.000	-.63760	.25470	-.00980	.00330	-.00050	.09490	.01150	.05420	.07110	.12090
.902	-7.970	-.49550	.19180	-.01080	.00310	-.00110	.10940	.01120	.05280	.06380	.11420
.902	-5.850	-.35490	.13060	-.01260	.00670	-.00120	.11950	.01100	.05190	.05750	.11180
.902	-3.730	-.22000	.05860	-.01140	.00690	-.00180	.12700	.01100	.05180	.05240	.11060
.902	-1.630	-.08660	-.00730	-.01200	.00680	-.00330	.12990	.01070	.05060	.04970	.11160
.902	.500	.04020	-.06220	-.01680	.00960	-.00270	.12610	.01070	.05070	.04650	.11450
.902	2.630	.17130	-.11410	-.01570	.00960	-.00240	.13060	.01060	.05000	.04660	.11840
.902	4.780	.29880	-.15800	-.01980	.01270	-.00220	.12490	.01080	.05090	.04430	.12290
.902	6.900	.42880	-.21300	-.02820	.01850	-.00290	.12930	.01070	.05030	.04050	.12500
.902	9.020	.55040	-.26740	-.03370	.02420	-.00240	.11180	.01110	.05250	.04110	.13230
.902	10.930	.65810	-.31520	-.03090	.02380	-.00160	.11340	.01110	.05260	.04250	.13700
	GRADIENT	.06068	-.02537	-.00096	.00068	.00001	-.00017	-.00002	-.00011	-.00091	.00148

RUN NO. 27/ 0 RN/L = 6.49 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.046	-10.150	-.69200	.29240	.00120	.00010	-.00070	.21670	.01220	.05740	.06450	.14620
1.046	-8.050	-.54470	.22330	.00250	.00060	-.00060	.23110	.01210	.05710	.05880	.13990
1.046	-5.900	-.37970	.15480	.00310	.00000	-.00030	.23190	.01250	.05900	.05580	.13790
1.046	-3.720	-.22190	.07940	.00420	-.00110	-.00030	.23890	.01250	.05890	.05010	.13430
1.046	-1.990	-.07280	.00750	.00320	-.00060	-.00070	.24310	.01240	.05830	.04430	.13250
1.046	.540	.06660	-.06700	.00090	.00160	-.00020	.24220	.01240	.05840	.03740	.13210
1.046	2.690	.20630	-.13260	-.00140	.00210	-.00070	.23520	.01210	.05720	.03480	.13500
1.046	4.840	.33260	-.17800	-.00500	.00610	-.00050	.23550	.01160	.05470	.02880	.13670
1.046	6.990	.45340	-.22400	-.01090	.00940	-.00100	.22410	.01180	.05570	.02860	.14240
1.046	9.120	.57010	-.27500	-.01740	.01530	-.00160	.21570	.01220	.05780	.02610	.14790
1.046	11.020	.67170	-.32190	-.01640	.01640	-.00160	.20890	.01230	.05790	.02590	.15250
	GRADIENT	.06486	-.03060	-.00108	.00080	-.00002	-.00069	-.00010	-.00044	-.00243	.00054

DATE 29 OCT 75

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (C8) (T9) (S3) SRB MISALND. (R90301) (29 SEP 73)

REFERENCE DATA

SREF =	6.1960 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBYAW =	-1.000

RUN NO. 28/ 0 RN/L = 6.59 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.245	-10.260	-.70160	.27540	-.00170	-.00280	-.00040	.25800	.01110	.05220	.06710	.13950
1.245	-8.140	-.52320	.19770	.00080	-.00230	-.00060	.24650	.01130	.05350	.06360	.13620
1.245	-5.980	-.36100	.12840	.00070	-.00240	-.00080	.25950	.01120	.05290	.05840	.13020
1.245	-3.760	-.20780	.06250	.00120	-.00190	-.00080	.27080	.01110	.05250	.05480	.12380
1.245	-1.600	-.05880	-.00220	-.00460	.00240	-.00160	.27560	.01140	.05360	.05090	.12370
1.245	.600	.08520	-.06140	-.00590	.00470	-.00160	.27560	.01160	.05470	.04710	.12460
1.245	2.740	.21570	-.12350	-.00670	.00600	-.00160	.27610	.01170	.05520	.04490	.12650
1.245	4.900	.35060	-.18340	-.00940	.00790	-.00170	.27590	.01170	.05520	.03930	.12660
1.245	7.050	.47820	-.24330	-.01090	.00940	-.00180	.26980	.01200	.05680	.03520	.12980
1.245	9.200	.58660	-.28200	-.01070	.01060	-.00350	.26200	.01210	.05700	.03230	.13470
1.245	11.140	.69570	-.32220	-.01030	.01190	-.00360	.25510	.01230	.05800	.03010	.13910
	GRADIENT	.06424	-.02830	-.00108	.00107	-.00008	.00049	.00007	.00031	-.00171	.00039

RUN NO. 30/ 0 RN/L = 6.45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.463	-10.320	-.71390	.27910	.00850	.00050	.00120	.26530	.00860	.04070	.05330	.10170
1.463	-8.190	-.54330	.20470	.00350	.00350	.00080	.27240	.00860	.04060	.04860	.10020
1.463	-6.010	-.37900	.13220	.00150	.00440	.00060	.27900	.00870	.04100	.04310	.09900
1.463	-3.800	-.22550	.06660	.00140	.00480	.00060	.28800	.00880	.04160	.03910	.09640
1.463	-1.640	-.08190	.00650	.00070	.00520	.00040	.29480	.00890	.04200	.03520	.09520
1.463	.560	.06010	-.05130	-.00070	.00410	.00010	.29730	.00900	.04260	.03070	.09620
1.463	2.730	.18720	-.10110	.00320	-.00070	-.00020	.29790	.00910	.04310	.02710	.09840
1.463	4.880	.30850	-.15120	-.00130	.00190	-.00100	.29740	.00910	.04310	.02440	.10040
1.463	7.030	.42710	-.20310	-.00160	.00210	-.00160	.29350	.00920	.04330	.02560	.10420
1.463	9.200	.55110	-.24960	-.00370	.00420	-.00220	.29130	.00940	.04430	.02310	.10470
1.463	11.170	.66650	-.28760	-.00700	.00700	-.00270	.28780	.00950	.04480	.02130	.10550
	GRADIENT	.06154	-.02500	-.00013	-.00054	-.00017	.00101	.00004	.00019	-.00173	.00052

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (08)(19)(53) SRB MISALND. (R90401) (29 SEP 73)

REFERENCE DATA

SREF =	6.1960 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBPIT =	1.000

RUN NO. 30/ 0 RN/L = 6.18 GRADIENT INTERVAL = -2.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.901	-10.010	-.68000	.24480	-.00630	-.00140	.00130	.09510	.01160	.05460	.06960	.11470
.901	-7.980	-.48000	.18220	-.00990	.00090	.00060	.10530	.01160	.05460	.06520	.10760
.901	-5.850	-.34640	.12410	-.01180	.00350	.00030	.11630	.01120	.05300	.05910	.10510
.901	-3.710	-.20530	.05420	-.00980	.00360	-.00060	.12620	.01090	.05160	.05160	.10340
.901	-1.620	-.08010	-.00360	-.01180	.00560	-.00140	.12780	.01090	.05160	.04750	.10650
.901	.510	.04610	-.06350	-.01220	.00660	-.00120	.12810	.01060	.05020	.04550	.10920
.901	2.640	.17740	-.11730	-.01240	.00840	-.00150	.12550	.01090	.05170	.04420	.11560
.901	4.780	.30920	-.16270	-.01590	.01160	-.00240	.12790	.01080	.05110	.04290	.12000
.901	6.890	.43010	-.22140	-.00900	.01000	-.00140	.11490	.01100	.05200	.04550	.12690
.901	9.010	.55600	-.27460	-.01590	.01400	-.00220	.11170	.01110	.05260	.04730	.13430
.901	10.920	.65790	-.31870	-.01540	.01470	-.00200	.11080	.01120	.05280	.04760	.13870
	GRADIENT	.08000	-.02554	-.00060	.00089	-.00017	.00005	-.00001	-.00004	-.00097	.00200

RUN NO. 32/ 0 RN/L = 6.44 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.046	-10.100	-.67830	.28690	.00340	-.00350	.00080	.20320	.01250	.05920	.06580	.14520
1.046	-8.030	-.52170	.21900	.00400	-.00210	.00070	.21960	.01240	.05850	.05890	.13510
1.046	-5.870	-.36840	.15160	.00380	-.00070	.00080	.23160	.01240	.05850	.05450	.12710
1.046	-3.710	-.21490	.07730	.00360	.00060	.00050	.24000	.01230	.05820	.04750	.12330
1.046	-1.570	-.06640	.00500	.00480	.00040	.00030	.24420	.01210	.05720	.04170	.12180
1.046	.550	.07490	-.06960	.00170	.00240	.00000	.24200	.01200	.05690	.03410	.12310
1.046	2.690	.21010	-.13510	.00140	.00270	-.00030	.23510	.01200	.05650	.03010	.12870
1.046	4.840	.33080	-.17810	-.00360	.00720	-.00060	.23360	.01170	.05520	.02650	.13140
1.046	6.980	.44970	-.22490	-.00120	.00640	-.00140	.22140	.01200	.05660	.02620	.13980
1.046	9.100	.56440	-.27910	.00260	.00490	-.00100	.20950	.01220	.05800	.02830	.14790
1.046	11.030	.67220	-.32560	-.00030	.00740	-.00070	.20200	.01250	.05920	.02860	.15430
	GRADIENT	.06404	-.03047	-.00083	.00073	-.00013	-.00103	-.00006	-.00031	-.00251	.00108

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (09) (T9) (S3) SRB MISALND. (R90401) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBPIT =	1.000

RUN NO. 31/ 0 RN/L = 6.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.246	-10.230	-.67480	.26210	-.00090	-.00620	.00060	.23650	.01110	.05240	.06490	.13260
1.246	-8.120	-.50060	.18610	.00140	-.00530	.00000	.24690	.01130	.05330	.06130	.12750
1.246	-5.950	-.34320	.11710	.00200	-.00430	.00000	.25730	.01120	.05300	.05740	.12260
1.246	-3.740	-.19270	.05340	.00120	-.00220	-.00040	.26690	.01120	.05290	.05360	.11800
1.246	-1.590	-.05110	-.00720	-.00200	.00220	-.00140	.27100	.01140	.05390	.04960	.11700
1.246	.600	.06910	-.06430	-.00460	.00530	-.00190	.26980	.01150	.05420	.04770	.11710
1.246	2.750	.22070	-.12530	-.00480	.00680	-.00190	.27140	.01170	.05510	.04370	.12180
1.246	4.900	.35080	-.18360	-.00560	.00900	-.00230	.27140	.01170	.05500	.03760	.12250
1.246	7.050	.48000	-.24370	-.00650	.00910	-.00280	.26520	.01200	.05690	.03420	.12820
1.246	9.200	.59080	-.28360	-.00440	.00890	-.00430	.25850	.01210	.05690	.03220	.13230
1.246	11.150	.69770	-.32040	-.00150	.00940	-.00500	.25040	.01250	.05790	.03000	.13760
	GRADIENT	.06285	-.02741	-.00076	.00125	-.00020	.00043	.00006	.00025	-.00177	.00064

RUN NO. 40/ 0 RN/L = 6.45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.463	-10.290	-.68740	.26800	-.00530	.00070	.00000	.27050	.00850	.04010	.05270	.09860
1.463	-8.160	-.52190	.19610	-.00100	-.00100	.00010	.27690	.00850	.04030	.04850	.09730
1.463	-5.990	-.35990	.12420	.00010	-.00040	.00040	.28350	.00860	.04080	.04310	.09530
1.463	-3.770	-.20980	.06350	.00360	-.00060	.00060	.29120	.00880	.04140	.03880	.09340
1.463	-1.620	-.06770	.00090	.00300	00010	.00030	.29730	.00900	.04240	.03440	.09260
1.463	.570	.06880	-.05630	-.00130	.00460	.00020	.29900	.00900	.04240	.03100	.09380
1.463	2.730	.19720	-.10890	.00210	.00150	.00030	.30000	.00900	.04250	.02780	.09560
1.463	4.880	.31850	-.16090	.00000	.00300	-.00010	.30070	.00900	.04270	.02510	.09660
1.463	7.030	.43710	-.21240	.00020	.00110	-.00060	.29890	.00920	.04350	.02610	.09870
1.463	9.190	.55970	-.26020	-.00110	.00180	-.00070	.29550	.00950	.04480	.02370	.10060
1.463	11.160	.67350	-.29910	-.00510	.00490	-.00180	.29260	.00960	.04540	.02020	.10070
	GRADIENT	.06104	-.02580	-.00039	.00040	-.00006	.00100	.00002	.00012	-.00157	.00043

DATE 2 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

(R90402) (29 SEP 73)

MSFC 573 (IA31FC) (C8) (T9) (S3) SRB MISALND.

REFERENCE DATA

SREF =	6.1960 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBPIT =	-1.000

RUN NO. 33/ 0 RN/L = 6.16 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.897	-10.030	-.69910	.25160	.00510	.00090	.00280	.09690	.01150	.05450	.06920	.11630
.897	-7.970	-.49380	.18610	.00310	.00200	.00170	.10610	.01150	.05430	.06390	.11250
.897	-5.840	-.36510	.13360	.00040	.00410	.00130	.11870	.01110	.05250	.05930	.10490
.897	-3.750	-.23150	.06800	-.00410	.00630	-.00100	.12700	.01100	.05190	.05150	.10170
.897	-1.630	-.10240	.00780	-.00570	.00560	-.00070	.12930	.01090	.05150	.04800	.10240
.897	.500	.02690	-.05150	-.00420	.00460	-.00130	.14110	.01030	.04860	.04150	.09800
.897	2.630	.15910	-.10680	-.00380	.00400	-.00140	.13290	.01060	.04980	.04220	.10670
.897	4.750	.28420	-.15800	-.00260	.00310	-.00130	.13120	.01070	.05050	.04040	.11070
.897	6.880	.41700	-.21400	-.00700	.00510	-.00220	.12850	.01070	.05070	.03970	.11450
.897	9.010	.54140	-.27090	-.01950	.01030	-.00290	.12130	.01060	.05110	.04130	.12250
.897	10.920	.64740	-.31480	-.01260	.00760	-.00230	.11670	.01110	.05260	.04140	.13040
	GRADIENT	.06081	-.02646	.00014	-.00038	-.00006	.00056	-.00004	-.00021	-.00132	.00105

RUN NO. 33/ 0 RN/L = 6.45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.046	-10.150	-.69570	.29260	.01010	.00200	.00260	.20590	.01260	.05930	.06510	.14400
1.046	-8.080	-.53990	.22500	.00430	.00560	.00170	.22000	.01230	.05810	.05930	.13900
1.046	-5.880	-.36380	.15770	.00480	.00570	.00130	.23110	.01230	.05830	.05360	.13130
1.046	-3.730	-.23390	.06870	.00450	.00540	.00040	.23860	.01240	.05830	.04910	.12520
1.046	-1.800	-.08540	.01670	.00410	.00370	-.00020	.24410	.01210	.05700	.04240	.12270
1.046	.350	.05840	-.05530	.00300	.00220	-.00050	.24440	.01200	.05670	.03600	.12130
1.046	2.680	.19350	-.12200	.00330	.00130	-.00110	.24210	.01190	.05620	.03010	.11990
1.046	4.830	.31420	-.16750	.00510	.00130	-.00150	.23960	.01160	.05480	.02720	.12260
1.046	6.970	.43530	-.21410	.00410	.00090	-.00210	.22720	.01190	.05640	.02610	.13100
1.046	9.080	.55040	-.27070	.00300	.00040	-.00230	.21310	.01230	.05810	.02680	.14100
1.046	11.030	.65680	-.31590	-.00140	.00380	-.00220	.21190	.01220	.05740	.02450	.14470
	GRADIENT	.06425	-.03042	.00002	-.00050	-.00022	-.00000	-.00008	-.00036	-.00262	-.00037

DATE 29 OCT 73

TABULATED SOURCE DATA, MSFC TWT 573

MSFC 573(IA31FC) (C8) (T9) (S3) SRB MISALND.

(R90402) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA =	.000	ORBINC =	.500
DELTAZ =	.140	SRBPIT =	-1.000

RUN NO. 34/ 0 RN/L = 6.56 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.248	-10.260	-.69920	.27140	.00700	.00010	.00190	.23600	.01110	.05250	.06610	.13170
1.248	-8.150	-.52230	.19480	.00500	.00190	.00130	.24590	.01130	.05330	.06160	.12890
1.248	-5.950	-.35980	.12490	.00420	.00290	.00070	.25530	.01120	.05260	.05610	.12190
1.248	-3.760	-.20810	.06100	.00210	.00400	.00010	.26410	.01120	.05310	.05280	.11920
1.248	-1.600	-.06450	-.00010	.00250	.00310	-.00060	.27300	.01130	.05360	.04880	.11710
1.248	.590	.07660	-.05740	.00220	.00220	-.00130	.27240	.01150	.05410	.04700	.11790
1.248	2.740	.20540	-.11290	.00310	-.00020	-.00220	.27500	.01160	.05490	.04250	.11990
1.248	4.890	.33390	-.17170	-.00080	.00280	-.00270	.27530	.01140	.05400	.03650	.12020
1.248	7.040	.45920	-.23000	-.00430	.00470	-.00370	.26850	.01190	.05640	.05500	.12260
1.248	9.180	.58330	-.26960	-.00530	.00650	-.00540	.26050	.01200	.05680	.02990	.12690
1.248	11.150	.67920	-.31090	-.00550	.00740	-.00540	.25370	.01230	.05820	.02740	.13340
	GRADIENT	.06257	-.02672	-.00024	-.00026	-.00033	.00113	.00003	.00014	-.00180	.00022

RUN NO. 41/ 0 RN/L = 6.46 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
1.462	-10.320	-.71170	.27830	.00210	.00000	.00020	.26580	.00890	.05940	.05370	.10590
1.462	-8.190	-.53970	.20320	.00200	-.00080	.00000	.27360	.00840	.05980	.04900	.10540
1.462	-6.000	-.37450	.13130	.00380	-.00210	.00010	.28340	.00850	.04030	.04280	.10360
1.462	-3.790	-.22110	.06600	.00120	-.00030	.00000	.29310	.00870	.04100	.04090	.09960
1.462	-1.620	-.07370	.00590	-.00130	.00180	.00000	.29920	.00870	.04130	.03630	.09840
1.462	.570	.07000	-.05370	-.00320	.00350	.00000	.30140	.00880	.04150	.03150	.09910
1.462	2.740	.19340	-.10690	-.00340	.00320	.00000	.29940	.00890	.04200	.02930	.10100
1.462	4.900	.32480	-.15970	-.00300	.00340	.00000	.29930	.00900	.04260	.02660	.10540
1.462	7.050	.44690	-.21310	-.00570	.00460	.00020	.29770	.00900	.04250	.02710	.10540
1.462	9.210	.57110	-.26290	-.00640	.00680	.00090	.29770	.00920	.04340	.02430	.10470
1.462	11.180	.68540	-.30020	-.00280	.00740	.00070	.29380	.00930	.04380	.02270	.10560
	GRADIENT	.06274	-.02586	-.00048	.00041	.00000	.00065	.00004	.00018	-.00164	.00047

MSFC 573 (IA31FC) (OB) (T9) (S3) G (R90500) (29 SEP 73)

REFERENCE DATA

SREF =	6.1980 SQ. IN	XMRP =	2.5490 IN.
LREF =	5.3130 IN.	YMRP =	.0000 IN.
BREF =	5.3130 IN.	ZMRP =	.0000 IN.
SCALE =	.0040		

PARAMETRIC DATA

BETA = .000 ORBINC = .500
DELTAZ = .140

RUN NO. 13/ 0 RN/L = 6.2E GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CNBO	CABO	CABE	CABS
.908	-.030	.00390	-.04490	-.03130	.01750	-.00460	.16270	.01110	.05250	.04510	.08510
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000